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THE
QUARTERLY JOURNAL
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NOVEMBER, 1924

ALFRED MARSHALL

In the death of Alfred Marshall,[1] economic science lost its most distinguished representative. None among the English-speaking will question his primacy; and I doubt whether on the Continent or elsewhere a name could be mentioned that would dispute his title. For a generation his position of leadership was secure; and his death leaves a vacancy that will long wait to be filled.

His main contributions to our subject are easily listed. I will not undertake anything in the nature of a catalog; such will not fail to be prepared with piety by his countrymen. The first of the publications that attracted wide attention was the little book on the *Economics of Industry* (1879), "by A. and M. P. Marshall." Compact tho it was, it showed the marks of an acute, independent, forward-making mind (we have no idiomatic equivalent of the German term "bahn-brechend"). As a piece of exposition, it has qualities not surpassed, not always maintained, in the later writings; and it remains good to read and to ponder on. Some brief papers and addresses also belong to the earlier period; among them is the notable address on *The Present Position of Economics* (1885), delivered on the assumption of the

1. Born July 26, 1842; died, July 13, 1924.

Professorship of Political Economy at Cambridge. Very early, too (1878), came a pamphlet on the theory of foreign trade, privately printed, but of a quality to put on the *qui-vive* the economists who had the privilege of examining it.[2]

More than a decade after the publication of the *Economics of Industry*, the *Principles of Economics* appeared, the first edition having the date 1890. It was designed to be the initial volume of a large treatise in several volumes, covering all phases of economics; somewhat on the scale of the ambitious works which German scholars plan and occasionally complete. Indeed, the phrase "an introductory volume" remains on the title-page of the last edition of the *Principles*. But it was more than an initial or introductory volume. It was an ordered and systematic restatement of fundamentals, complete in itself; a work fit to crown any man's life. It was succeeded shortly by a condensation for students use, the *Elements of Economics*. This suffered — so it has always seemed to me — from defects of style observable in all his writings, and no small obstacle in a book for beginners. The earlier elementary book (*Economics of Industry*) had qualities of directness, vividness, comprehensibility, which one misses not only in the *Elements* but throughout the later writings. Popularization, however, was neither his forte nor his ambition. It was doubtless the publishers who caused him to turn for a brief space to writing of this kind, and he soon went back to work of a higher order. He gave great time and labor to revising and perfecting the *Principles*, — of this process of elaboration I shall say something presently, — and to reading and planning for the volumes that were to follow. The fruit of long years of persistent tho not uninterrupted labor came in the two

2. The original pamphlet I have never seen. It is reproduced in Appendix J of Marshall's last book, Money, Credit and Commerce.

books on *Industry and Trade* (1919) and *Money, Credit and Commerce* (1923). With these the imposing plan may be said to have been completed.

It must be said of the last two books that they are not comparable in significance with the *Principles*. Marshall had the experience which has befallen many a German scholar who has attempted similar ambitious projects. The volumes that deal with "applied economics" and constitute in some sort a response to the demand for a realistic treatment, never have the permanent influence of those dealing with the underlying principles. They may illustrate and enrich, verify or modify, enable those who understand already to understand still better; but none the less their effect is likely to be ephemeral. This difficulty, unavoidable in any books of the kind, was accentuated in the case of Marshall's last two volumes by the circumstance that they rested mainly on reflections and observations of the pre-war period, but appeared after the war. It is going altogether too far to say — as some have done — that they were obsolete when published; but it is true that they failed to take adequate account of the extraordinary phenomena of the last decade. A further obstacle to their effectiveness arose from Marshall's style. His method of exposition is not adapted to the historical, narrative, descriptive matter which bulks so large in them. In their pages is to be found many a flash of the man's genius, and from the pen of another they would have been heralded as works of the first order. But from the author of the *Principles* they came somewhat with the effect of an anti-climax.

The only serious digressions from sustained devotion to the scholar's tasks which Marshall permitted himself arose from public calls. In 1888 he sent to the Gold and Silver Commission a "Memorandum on the Effects

which Differences between the Currencies of Different Countries have on International Trade"; and in 1903 he sent in a "Memorandum on the Fiscal Policy of International Trade" (reprinted in a second edition, 1908). Both show the eminently judicial spirit of the man, and his keenness and unerring reasoning; and both show the corresponding qualities of caution, qualification, a certain lack of directness. In 1891 he was appointed a member of the Commission on Labor, and devoted much time to its sittings and hearings. From these — so I have heard him say — he derived great benefit through better understanding of the diversity of the actual economic happenings, their multifarious character, the order within apparent disorder. Yet it may be doubted whether the experience substantially enriched his equipment or enabled him to do more or better work of the kind in which he was preëminent.

In general, to repeat, Marshall kept to the large and fundamental problems. He had a strong feeling against half-baked work, pot-boilers, anything rapidly thrown off. For himself at all events, he felt that his strength was limited and that he must give all he had to perfected work of a kind that had promise of lasting significance. He was frail of body; and he believed himself frail of mind also, in the sense that he was sensitive to the strain of concentrated intellectual attention. Yet when one goes through his writings, and sees on every page the marks of unfailing attention to every point, of wide reading, of extraordinary fertility and invention, no suspicion arises of anything in the nature of a physical limitation. While he did not digress from the scholar's field, within that field he had the strength and the will to roam freely. Many a footnote, passed over lightly on a first reading, becomes a mine of suggestion on the second or third; and on such attentive perusal it

is found to show not only that much labor had been given to what is there, but that much must have been given to what was put aside and yet would probably have been retained by others with justified pride. Marshall was alive to the intricacies of every problem, strongly tempted by the pleasure of intellectual workmanship. Often enough he gives warning to the reader that this or that passage serves rather to satisfy intellectual curiosity than to advance in substance the matter in hand; yet no reader who follows him in such excursions fails to experience the satisfaction derived from faultless reasoning and nicety of distinction. Taking account not only of the number of pages and of the familiar and outstanding doctrines and conclusions, but of all the elaborations and ramifications of the man's work, they constitute in mere volume a great monument.

Of Marshall's general doctrines and of his specific contributions it is superfluous to speak in detail. Their influence is writ large in almost everything, good and bad, weighty and superficial, that comes nowadays from the economists, or at least from those who write in English. As with Adam Smith, so with Marshall, the beginner who has been introduced into the subject as currently expounded, and then has been led to explore among the great writers of the past, quite possibly will get an impression similar to that of the youth who read *Hamlet* for the first time: he did not think much of it, because it was so full of quotations. Marshall's turns of phrase have become household words. This is most strikingly the case with Book V of the *Principles*. Demand schedules and supply schedules, the equilibrium of supply and demand, short-period and long-period equilibrium, internal and external economics, the representative firm, rent and quasi-rent — these have become part of the stock-in-trade of every teacher and student. But they

are more; they are crystallizations of trains of reasoning and substantive conclusions which have become imbedded in the structure of economics.

So it is with consumers' surplus ("consumers' rent" it was in the first edition). We may find the source of the notion, indeed the underlying principle, in earlier writers; we may qualify or amplify; we may think we have progressed beyond; indeed we may quite reject; but here is something with which all of us must reckon, something which has potently stimulated our thinking, enlarged our conception of the meaning of economic activity for human happiness. As regards the qualifications and limitations of the doctrine, no one was better aware of them than was Marshall himself. In the earlier chapter on this topic he speaks of his treatment as "an elementary analysis of a formal sort." Elementary? Let the reader examine that extraordinary chapter on the "Doctrine of Maximum Satisfaction"; and however he may ponder and doubt on the suggested applications in practice, he cannot withhold admiration of the intellectual achievement, or of the modesty which would describe it all as an elementary analysis. And that it was an analysis of a formal sort, no one appreciated better than he. Behind it lie the unsolved and perhaps insoluble problems of the spirit — what is happiness, what is progress, why life is worth living. That all this was in the background he knew quite as well as the critics; nor did he elaborate the reasons why, within the modest scope of economics, this attempt to measure satisfaction and welfare may lead to conclusions of no mean importance.

I have referred to the many editions of the *Principles* — the first in 1890, the eighth in 1920. The changes in the successive editions and the manner in which they were made are characteristic of the man's ways of work-

ing and writing. Those of the second were the most considerable. They involved a radical rearrangement of sundry chapters and noteworthy modifications of phraseology; none the less, hardly anything new in substance. The process of rearranging, polishing, toning up or toning down, was carried on in the later editions, especially in the fourth and fifth. Matter was transferred from text to appendix, from one chapter to another. Concessions were made to critics, yet none that affected the core of the original statements; qualifications were inserted, yet few which the understanding reader would not bear in mind himself. The later literature of the several topics was noted, often with searching tho courteous criticism; but this is a labor that needs to be renewed as soon as done — it is a task of Sisyphus. I suspect that the prolonged revision of the printed page was but a continuation of what had been going on with the manuscript before it went to the printer at all. And the result was not in proportion to the labor bestowed. The great things were full-blown in the first edition. The time and energy lavished on revision could have been given with more profit to further large undertakings. And sometimes there was no gain at all. The repeated reworking did not always bring a real improvement in the pages. Marshall's style at its best is not luminous. Tho every sentence is careful and well-constructed, the sentences, and not less the paragraphs and sections, follow each other in halting measure, occasionally even with an effect of confusion. They do not leave their impress on the reader's mind. Marshall can never be skimmed and must always be studied — repaying the study, it is true, in ample measure. But the anxious desire to prevent misunderstanding, the constant endeavor to forestall objection, to be exact and perfect in every utterance, made the exposition no better, sometimes made it worse.

Marshall was so keenly aware of the complexities of the actual world, so fully aware of the hazy character of our "tendencies," "approximations," "fundamental principles," that he shrank from a plain and simple statement as from positive pain. In the annals of the Political Economy Club, lately compiled by Mr. Henry Higgs with so much devotion, there is an anecdote that deserves quotation. "Professor Marshall was addressing us, when our reverent silence was broken by some rash opponent who interjected half a dozen words of objection. 'All short statements are wrong,' said the Professor. 'Is that one?' asked Courtney, and the incident closed with laughter." [3]

Is it not well sometimes to commit one's self to short statements? to a plain and simple doctrine? Man wants answers on his fundamental problems; and however we realize their complexities, we must either openly confess ignorance once for all, or assume the responsibility of giving a yes or no.

All this meticulous care, this anxious fear of falling into inaccuracy or of being misunderstood, had some consequences that went beyond caution and precision. The substance of things is sometimes left still obscure. The debate on the specific productivity of labor and capital has played a large part in recent discussion, and one would wish to know just where the protagonist of English economists stood. It is not easy to make out.

We may suppose that in a certain factory an extra £100 worth of machinery can be applied so as not to involve any other extra expense, and so as to add annually £3 worth to the net output of the factory, after allowing for its own wear and tear. If the investors of capital push it into every occupation in which it seems likely to gain a high reward; and if, after this has been done and equilibrium has been found, it still pays and only just pays to employ this machinery, we can infer from this fact that the yearly rate of interest is 3 per

3. H. Higgs, Political Economy Club, p. 353.

cent. But illustrations of this kind merely indicate part of the action of the great causes which govern value. They cannot be made into a theory of interest, any more than into a theory of wages, without reasoning in a circle.

As regards wages, on the other hand, the productivity doctrine, tho admitted to be valid as regards the wages of any *class* of labor, is said to have by itself "no real meaning as a theory of wages"; while yet "the doctrine throws into clear light *one* of the causes that govern wages." (The italics are mine.) These several utterances are not inconsistent; but one would wish them to be brought together in a connected whole. Just what is the reasoning in a circle? A later passage presumably gives the clue: "The substitution of capital for labour is really the substitution of labour, combined with much waiting, in the place of other forms of labour combined with little waiting." But the reader must piece together these passages and others; and only if he has thought and read much for himself can he make out what was in Marshall's mind — and at the end may remain still in doubt.[4]

On another much-debated question, the theory of business profits and the high gains of the fortune-makers, we find also a circumspect and qualified doctrine; tho here, to be sure, it is the doctrine itself, not the statement, that is circumspect. The gist of it — to recall familiar matter — can be stated in a few words. Exceptional gifts for organization and management bring it about that the individuals possessing them reap large profits; and for such individuals the gains are quite analogous to the rent of exceptional land sites. But the conspicuous prizes of these fortunate few are offset by the multiplied and obscured losses of the many who fail; and so heavy are the losses, so great the risks, that in the balance of account for the business men as a class, noth-

4. The passages referred to are at pp. 518, 519, 523 of the sixth edition.

ing in the nature of a surplus is left. For myself I have never been convinced that the risks, especially for the particular individuals who possess the unusual gifts, are really so great as to bring even an approach to this equalizing result. No doubt some allowance must be made for risks and failures. But the "rent of ability" cannot be thus disposed of as an economic and social problem; it is not in this way that the last word can be said about large business profits and the fortunes of the great money-makers.

Closely related to this problem is still another, or rather a group of problems: those which used to be considered under the head of "Differences of Wages," now more commonly associated with the wider subject of social stratification. Here both the doctrine of Marshall and his statement of it leave an impression of indecision. We find it laid down that the hardest and most repellent labor is the worst paid; that those who do such labor remain submerged in the lowest social and economic stratum by forces whose operation is cumulative; that no task is more urgent than that of lifting them to higher levels. The implications would seem to be clear: there *is* a lack of free movement between the industrial strata and the social classes. The term non-competing groups (rejected with some scorn) may not fit the situation; but there can be no question — so it would seem — that equalization of the attractiveness of different occupations is not believed to take place. Yet in the final summing up, at the close of several elaborate chapters, we find this (the italics again are mine):

> The incomes which are being earned by all agents of production, human as well as material, and those which appear likely to be earned by them in the future, exercise a ceaseless influence on those persons by whose action the future supplies of these agents are determined. There is a constant tendency towards a position of normal equilibrium, in which the supply of each of these agents shall stand

in such a relation to the demand for its services, as to give to those who have provided the supply a *sufficient* reward for their *efforts and sacrifices*. If the economic conditions of the country remained stationary sufficiently long, this tendency would realize itself in such an adjustment of supply to demand, that both machines and human beings would earn generally an amount that corresponded fairly with their *cost of rearing and training* (*conventional necessaries* as well as those things which are strictly necessary being reckoned for).[5]

"Sufficient" for what? Sufficient to equalize the attractiveness of all occupations — that is, such as to leave those differences only which would persist under perfect freedom of opportunity? or sufficient to meet a supply price of the several grades of labor? And *is* there such a supply price? The other words which I have italicized ("conventional necessaries," etc.) seem to intimate a doctrine to that effect. Yet a much more explicit reference to a supply price, based on different standards of living in different classes, which had appeared (as a hypothesis, to be sure) in an earlier edition,[6] was deleted in the later editions. And are differences in class standards of living — granting that these are indicated by the phrase "conventional necessaries" — things of the same order as "*cost* of rearing and training," not to mention "efforts and sacrifices"?

It is to be freely admitted that on these matters caution there must be. The subjects are elusive; hard-and-fast statements are dangerous. But something more precise, some sharper formulation of an outstanding conclusion, is awaited by an earnest and even anxious public. Is it entirely beyond the compass of the economists to give an unequivocal answer? Marshall's failure to arrive at anything of the kind is due in large part, no doubt, to his aversion to plain and simple doctrines. In part also it is due, I cannot but suspect, to a certain unwillingness to face the disquieting aspects of the eco-

5. Pages 576–577, sixth edition.
6. Second edition, bk. vi, vol. i, pp. 557–558.

nomic and social situation, the causes of persisting inequality, the difficulties of justifying the present distribution of income and property. Marshall was very far indeed from being a defender of things as they are; his scientific temperament would in itself have inhibited any such attitude, and his spirit was warm and generous. Yet unsparing criticism of the existing order, fervent advocacy of change, did not suit his temperament or enlist his sympathy.

This reflection leads to the final question that we ask ourselves as we survey his career and achievements. What will be Marshall's permanent place in the literature of economics? Will there be a Marshallian School? and what sort of permanent contribution will he prove in the end to have made to the advancement of the science?

In one direction we may be confident of an abiding influence, of a fruitful school. A school there is already, in the sense of a notable group of economists trained by him or in his methods; one now bringing England to a position of eminence in economics comparable to that of a century ago. But it differs from its predecessor — at least so far as the impress of Marshall is on it — in that there is no gospel. Marshall's is a cold doctrine, not a kindling one. Let me repeat that, in saying this, I would not intimate that he was indifferent to the question of social justice. I mean only that by temperament he was a man of science, not a preacher. He explains, he rarely exhorts. As regards the tasks of explanation and analysis, his leadership is not to be doubted. He combines the two things most needed for the advancement of economic science: on the one hand, strict and severe reasoning from premises; on the other, an understanding of the limitations of deductive reasoning, a recognition of the complexities of the actual world, a

hunger for facts. The accumulation of statistical data, their discriminating analysis, their orderly presentation; the history and accurate description of economic conditions; the testing and verification of hypotheses by every method and with the application of the most refined tools — all this is not only in accord with his practice, but stimulated by his intellectual and personal influence.

There are tasks of another order, however. They are concerned not merely with the working of the existing régime, dominated as it is by private property, but with the origin of that régime, its foundations, its growth, its future. Not a few of them doubtless may be regarded as lying outside the strict scope of economics: they reach into the domains of history, politics, ethics, psychology, biology. They deal with the make-up of the human species, the behavior of men, the mutability of their traditions and ambitions and ideals, the growth of institutions, the potentialities of progress; and with the great underlying question of what constitutes progress, what is right living, what is justice. The speculations and researches of the economists will turn in this direction no less fruitfully than to the familiar task of explaining things as they are. Both sets of problems must be taken in hand, and in both directions we may look for great advances, and eventually for an economic and social science far more profound than we now can boast of.

It is in the first-mentioned direction that Marshall was preëminent, opened new paths, established a tradition, founded a school. Needless to say, there is no opposition between the two; tho perhaps it is rare that the same individual is temperamentally attracted to both. One may speculate what Marshall might have brought to pass if his wide-ranging and penetrating intellect had

turned to the genetic problems in all their complexities. The last twenty years of his life might have been given unreservedly to these high matters; would they have yielded something that could be placed side by side with the *Principles*? It is idle to ask. We may be well content with what we have, and pay our tribute of gratitude for a great example and a great achievement.

F. W. TAUSSIG.

HARVARD UNIVERSITY.

THE DISTRIBUTION OF CORPORATE OWNERSHIP IN THE UNITED STATES

SUMMARY

An important movement, in need of quantitative measurement, 16. — Federal income-tax returns indicate a wider distribution of dividend payments, 17. — Corroborative evidence furnished by a study of stock ownership in 281 corporations, 21. — An estimate of total capital stock of American corporations and of the number of domestic stockholders, 26. — Two periods of rapid diffusion, 29. — Stock ownership by employees, 32. — By customers, 32. — Labor banks, 33. — Tax-exempt securities, 35. — Effect of Liberty Bond campaigns, 35. — Increase of savings deposits, 36. — Effect of higher wages, 37. — Conclusion, 38.

THE growth of the modern corporation, along with the great diffusion of stockholding among the general public which has taken place in the last twenty-five years, is one of the distinctly significant trends of the period. The tendency toward a more democratic distribution of beneficiary interests in the corporations of the country has been attended by an increase in the number of people who are getting a portion of their income from their accumulated savings. Attention has been called to this development by various American writers on economics and finance.[1] The same tendency has been noted in England by Alfred Marshall. "In the earlier stages of capitalistic development, the first place was held by individuals, or by small groups of men, each possessing much wealth. In the modern age, many rail-

1. S. S. Huebner, "Stockholding in American Railroads," Annals of the American Academy of Political and Social Science, December 1923; S. S. Huebner, The Stock Market; J. E. Meeker, The Work of the Stock Exchange; H. S. Martin, The New York Stock Exchange; Bureau of Railway News and Statistics, Statistics of American Railways; Richard Boeckal, Labor's Money.

ways and other undertakings are owned in great part by multitudes of small capitalists. The main effect of this development is to strengthen the position of the middle classes relatively to the working classes on the one hand and to the wealthy classes on the other." [2]

These references, however, are all qualitative and descriptive in character. No statistical analysis has as yet been made of the wide distribution of stockholdings in the modern corporation. It is the purpose of this paper to make a quantitative study of the extent and direction of this development.

Two independent avenues of approach toward an exact determination of the general development of this tendency have been followed. (1) The division of ownership of corporations, as manifested by the number of stockholders and the average number of shares held by each stockholder, obtained by questionnaires and published statements. (2) The amount of dividends received by the various income classes in the United States, as revealed by income-tax statistics. These two avenues, altho independently traversed, lead to the same conclusions.[3]

There has been a large increase in the number of stockholders in the United States — from approximately 4,400,000 in 1900 to approximately 14,400,000 in 1922. Not only has the basis of ownership expanded, but there has been an appreciable shifting of the owner-

2. Money, Credit and Commerce, p. 68.

3. The basic data for this study were obtained from four independent sources: (1) Statistics of Income in the United States, published by the U. S. Commissioner of Internal Revenue, for the years 1916 to 1922 inclusive. (2) Questionnaires sent to about two hundred of the largest corporations in the country, to which 108 replies were received. (3) Information for nine corporations in New York City was obtained by direct solicitation. (4) As a further check and for additional information, published statements, financial reports of individual corporations, and other available information were also used.

ship of corporations from the wealthier classes to those of moderate and small means. In 1921, for example, the income-tax figures show that the classes in the United States with incomes under $20,000 per annum received 53.2 per cent of the dividends paid, which means that the class receiving incomes of over $20,000 per annum had an equity of less than 50 per cent in the corporations of the United States.

I

In Table I are listed the number of returns, the total net income reported, and the amount of dividends included in the net income of each class for the years 1916 to 1922 inclusive. The division of the classes is as follows: Annual incomes from $1,000 to $5,000, from $5,000 to $10,000, from $10,000 to $15,000, from $15,000 to $20,000, and over $20,000. The figures for 1916 are not strictly comparable to those for subsequent years, since the exemptions for that year were $3,000 for an unmarried person and $4,000 for a married person, while in 1917 and later years, these exemptions were reduced to $1,000 and $2,000 respectively, making the number of returns and the total net income in the group up to $5,000 much smaller in 1916 than in any succeeding year. With this in mind, however, the 1916 figures may be of some use in the final analysis.

A brief summary of the salient points which an analysis of Table I brings out may help to clarify the problem.

1. For the income class of over $20,000, the largest aggregate, both in absolute figures and in percentage of total dividends received, is found in 1916 and amounts to $1,694,000,000 or 79.3 per cent of the total dividends reported. This is followed by practically an uninterrupted decrease in the percentages of dividends reported by this class each year until 1921, when the lowest figure — $1,158,000,000, equal to 46.8 per cent of total

TABLE I.—INCOMES RETURNED FOR THE CALENDAR YEARS 1916–22

Year and income group (in thousands of dollars)	Returns		Net income		Dividends	
	Number (in thousands)	Per cent distribution	Amount (in millions of dollars)	Per cent distribution	Amount (in millions of dollars)	Per cent distribution
1916						
3– 5	130	36.5	515	10.4	38	1.8
5–10	126	35.6	865	17.6	144	6.7
10–15	37	10.5	451	9.1	.... *	.... *
15–20	19	5.2	316	6.4	260	12.2
Over 20	43	12.2	2,788	56.5	1,694	79.3
Total	355	100.0	4,935	100.0	2,136	100.0
1917						
1– 5	1,399	76.4	4,181	37.4	190	9.5
5–10	271	14.8	1,827	16.3	230	11.6
10–15	66	3.6	796	7.1	161	8.1
15–20	30	1.6	516	4.6	121	6.1
Over 20	66	3.6	3,871	34.6	1,289	64.7
Total	1,832	100.0	11,191	100.0	1,991	100.0
1918						
1– 5	3,946	89.2	9,394	59.0	335	14.1
5–10	320	7.2	2,146	13.5	316	13.3
10–15	70	1.6	848	5.3	208	8.8
15–20	30	.7	522	3.3	153	6.5
Over 20	59	1.3	3,014	18.9	1,358	57.3
Total	4,425	100.0	15,924	100.0	2,370	100.0
1919						
1– 5	4,675	87.7	11,150	56.1	326	13.3
5–10	439	8.2	2,954	14.9	322	13.1
10–15	98	1.8	1,183	6.0	225	9.2
15–20	42	.8	724	3.6	170	6.9
Over 20	79	1.5	3,848	19.4	1,411	57.5
Total	5,333	100.0	19,859	100.0	2,454	100.0
1920						
1– 5	6,578	90.6	15,274	64.4	372	13.6
5–10	455	6.3	3,068	12.9	385	14.0
10–15	104	1.4	1,253	5.3	273	10.0
15–20	45	.6	765	3.2	205	7.5
Over 20	78	1.1	3,375	14.2	1,501	54.9
Total	7,260	100.0	23,735	100.0	2,736	100.0
1921						
1– 5	6,137	92.1	13,215	67.5	562	22.7
5–10	353	5.3	2,379	12.1	349	14.1
10–15	80	1.2	967	5.0	233	9.4
15–20	34	.5	588	3.0	175	7.0
Over 20	58	.9	2,428	12.4	1,158	46.8
Total	6,662	100.0	19,577	100.0	2,477	100.0
1922						
1– 5	6,193	91.2	13,532	63.4	491	18.4
5–10	391	5.8	2,642	12.4	356	13.4
10–15	90	1.3	1,092	5.1	237	8.9
15–20	40	.6	686	3.2	182	6.8
Over 20	73	1.1	3,384	15.9	1,398	52.5
Total	6,787	100.0	21,336	100.0	2,664	100.0

* Not reported.

dividends — is reached. The year 1922 shows a slight increase over 1921, but remains lower than any of the other years.

2. The dividends received by the class of $5,000 to $10,000 show a large increase from 1916 to 1917 and a further increase from 1917 to 1918. From then on, the dividends received by this class are comparatively stable both in absolute amount and in percentage of the total dividends reported. The dividends reported by the income class of $10,000 to $15,000 amount to $161,000,000 in 1917 or 8.1 per cent of the total, while in 1918 they increase to $208,000,000 or 8.8 per cent of the total. Both the absolute and the relative amounts of the dividends reported by this class remain approximately the same for the following years. The dividends received by the class of $15,000 to $20,000 amount to $121,000,000 or 6.1 per cent in 1917, 6.5 in 1918, 6.9 in 1919, 7.5 in 1920, 7.0 in 1921, and 6.8 in 1922. It is obvious, therefore, that the dividends received by the group of income classes between $5,000 and $20,000 did not vary in relative importance very materially from 1917 to 1922, the total percentages of these three classes in 1917 being 25.8 per cent; in 1918, 28.6; in 1919, 29.2; in 1920, 31.5; in 1921, 30.5; and in 1922, 29.1.

The largest increase occurs in the class of incomes of $1,000 to $5,000. In 1916, the dividends received by this group amount to only $38,000,000 or 1.8 per cent of the total dividends reported. The figures for this year, as was pointed out above, should not be used for comparative purposes, since the exemption limits were so high in 1916 as to make the number of returns in this class small. The year 1917, therefore, should be the first year for comparative purposes. In 1917, dividends reported by this class amounted to $190,000,000 or 9.5 per cent of the total dividends reported. In 1918, this

amount rose to $335,000,000 or 14.1 per cent of the total. In 1919, there was a drop of about ten million dollars in the total amount and a decrease to 13.3 per cent. In 1920, there was a rise to $372,000,000. The year 1921, however, marked the point of greatest increase, rising to $562,000,000 or 22.7 per cent of the total dividends reported. In 1922, there was a slight decrease from the high point of 1921, but it still remained at $491,000,000, which is higher than any previous year except 1921.

To summarize. The figures demonstrate that since 1916 there has been an increase in the aggregate amount of annual dividends paid by corporations in the United States. Both the absolute and proportionate shares of this total which go to the class of income above $20,000 (to be designated for the purposes of this paper the "wealthy" group of the country) show substantial decreases from year to year over the period 1916 to 1921. The group which may here be termed the "middle class," whose income ranges from $5,000 to $20,000, shows moderate increases in the amount of annual dividends received for the period 1916 to 1921, both in absolute figures and in proportion to the total. The largest and most significant increase in dividends received has taken place in the class of incomes below $5,000 per annum, in the group which includes the "wage-earning class." [4] This suggests a tendency of the ownership of

4. It should be pointed out in this connection that the amounts shown as dividends received by employees may perhaps not be real income. In many cases of employee subscription the dividends received do not exceed by any considerable amount the interest paid on balances due to the corporation, so that the net income actually received by the individual is smaller than the dividends reported. The interest paid comes in as a deduction from gross income on the income-tax return. This would also be true for stock held on margin. It is to the advantage of the taxpayer to report dividends received in full, since they are not subject to the normal tax, and at the same time to deduct interest paid from the income which is subject to the normal tax.

corporations in this country to pass into the hands of the wage-earners — a phenomenon which may have great future possibilities. This gradual shifting of the ownership of corporations from the few to the many has not yet affected materially the actual control of corporations. On the contrary, it has strengthened controlling interests. One of the results of this great diffusion of stockholding is the possibility of controlling a large corporation through a comparatively small portion of the total stock of the corporation concentrated in the hands of a single individual or group. This may be an instrument for misuse in the hands of reckless speculators and unscrupulous promoters and makes the necessity for the protection of the individual stockholder greater than ever.

II

The second source of basic data with reference to the number of stockholders in the United States is a special inquiry made by the writer. About two hundred questionnaires were sent out, to which 108 replies were received. Data for other corporations were obtained from published statements and from other available sources. The data secured were as follows: (1) Number of stockholders in 1900; (2) Average number of shares held by each; (3) Similar information for 1910, 1913, 1917, 1920, and 1923.

It is obviously beyond the limits of the time and effort of an individual investigator to canvass every corporation in the United States for the necessary information. It was decided, therefore, to choose a group which might properly be considered representative of the corporate industries of the United States. Information was obtained for 281 corporations, distributed as follows among different industries.

Railroads	43
Public Utilities	37
Mining and Smelting	33
Oil and Allied Companies	30
Miscellaneous	25
Food Products	14
Railroad Equipments	13
Steel and Iron	11
Automobiles	11
Department Stores	9
Paper and Printing	7
Textile and Silk	6
Auto Accesories	6
Tire and Rubber	5
Sugar	5
Shipping	4
Coal Companies	4
Farm Machinery	3
Banks and Insurance	3
Express	3
Pictures and Theatres	3
Shoe and Leather	2
Tobacco	2
Canning	2

Incompleteness of records, or the recent establishment of some of the companies, made it impossible to obtain comparative data for the years prior to 1923 for all. Of the 281 included in 1923, only 136 responded for 1920, 95 for 1917, 123 for 1913, 78 for 1910, and 68 for 1900. For these 68 companies a complete record is available and is presented in Table II (pages 24 and 25), which gives the name of each company, the source of information respecting it, the number of shares outstanding, the number of shareholders, and the average number of shares held by each stockholder for the years 1900 to 1923. Of the 68 companies in 1900 only 66 reported in 1923. Some of the companies did not report intervening years, so that the number of companies included fluctuates somewhat from year to year. The 68 companies in 1900 (or the nearest year for which data are

available) had a total of 342,346 stockholders. In 1923, 66 of the 68 companies had 1,786,214 shareholders. The increase in the number of shareholders from 342,346 to 1,786,214, an increase of over 500 per cent, is a phenomenon of unusual interest and importance.

Of the 68 companies listed for the year 1900, 31 (denoted in Table II by an asterisk) had only one kind of stock outstanding, whether common or all preferred. Since there can be no duplication of stockholders in such cases, the data for these 31 companies were studied separately, with results similar to those revealed for the whole group covered, in Table II. In 1900, the 31 companies had 148,951 stockholders, whereas in 1923, 30 of these companies had 983,438 shareholders, an increase in number of stockholders of about 560 per cent over a period of 23 years.

TABLE III.—SUMMARY OF CHANGES IN STOCKHOLDINGS IN AMERICAN CORPORATIONS, 1900–23

	1900	1910	1913	1917	1920	1923
Corporations	68	78	123	95	136	281
Stockholders (thousands)	342	550	923	1,076	1,780	3,416
Shares (millions)	56	64	101	107	160	342
Aggregate par value (millions of dollars)	4,795	4,747	8,030	8,315	10,814	16,974
Average number of shares per stockholder	163.9	117.0	109.9	99.2	90.2	100.2
Average number of $100 par value shares per stockholder	140.1	86.3	87.0	77.3	57.3	49.7
Average number of shares per company (thousands)	819	825	825	1,121	1,180	1,218
Average amount of par value shares per company (millions)	$71	$61	$65	$88	$80	$60
Average number of stockholders per company	5,036	7,054	7,505	11,323	13,085	12,192

TABLE II.—STOCK AND STOCKHOLDERS OF AMERICAN CORPORATIONS, 1900–23

Name of company	Source[1]	Year	1900 (Or year specified) 68 companies		Source[1]	1910 54 companies	
			Number of shareholders	Number of shares		Number of shareholders	Number of shares
Adams Express Company *	3	1901	2,930	100,000	1	2,935	100,000
American Brake Shoe	3	1906	687	50,090	3	877	76,000
American Car & Foundry	1	....	7,747	600,000	1	9,912	600,000
American Express Company *	3	1901	3,971	180,000	3	3,904	180,000
American Light & Traction	3	1901	570	121,278	3	2,303	256,624
American Locomotive	1	....	1,700	500,000	1	8,198	500,000
American Smelting & Refining Company	1	....	3,398	1,000,000	1	9,464	1,000,000
American Sugar Refining Company	3	1901	10,816	739,360	3	19,551	900,000
American Telephone & Telegraph Co.*	1	....	7,535	891,005	1	40,381	2,633,356
Atlantic Coast Line	1	1902	702	251,779	1	2,278	581,529
Atchison, Topeka & Santa Fe	7	1904	17,798	2,161,995	.	.....	.....
Baltimore & Ohio	4	1904	7,132	1,842,447	.	.....	.....
Boston & Maine	4	1904	7,402	269,878	.	.....	.....
Brooklyn Union Gas *	1	....	1,313	180,000	1	1,593	180,000
Chesapeake & Ohio	1	....	1,145	605,288	1	2,268	627,923
Chicago & Northwestern	1	....	4,907	615,074	1	8,023	1,372,587
Chicago Pneumatic Tool	3	1901	400	75,000	1	530	65,000
Commonwealth Edison *	5	1907	1,255	300,000	5	1,780	327,298
Consolidated Gas of New York	3	1901	3,729	716,305	3	5,180	998,165
Delaware & Hudson *	4	1904	3,819	409,900	.	.....	.....
Delaware, Lackawanna & Western *	1	....	1,896	525,580[2]	1	1,699	603,242[2]
Diamond Match Company *	3	1901	1,550	150,000	3	3,385	160,000
Dupont Powder	3	1906	809	400,721	3	2,050	452,753
Eastman Kodak	3	1906	2,710	257,019	3	3,018	256,780
Erie Railroad	4	1904	4,309	1,762,713	.	.....	.....
Edison Electric Ill. Co. of Boston *	3	1901	635	78,500	3	3,630	156,057
Electric Storage Battery *	3	1906	500	180,000	1	1,401	162,500
General Electric Company *	1	....	2,900	246,754	1	9,486	651,798
General Asphalt	1	....	2,089	310,000	1	2,294	310,000
Great Northern *	1	....	1,690	984,135	1	16,298	2,099,815
Great Northern Iron Ore *	1	1906	3,762	1,500,000[4]	1	4,419	1,500,000[4]
Chicago, Milwaukee & St. Paul	4	1904	5,832	1,059,080	.	.....	.....
Illinois Central	1	....	7,025	599,950	1	9,790	1,092,868
International Paper	1	....	2,245	400,700	1	4,096	400,700
Laclede Gas Light	3	1901	269	110,000	3	1,204	132,500
Lehigh Coal & Navigation *	3	1901	2,981	287,331[2]	3	4,620	531,159[2]
Louisville & Nashville *	4	1904	1,672	600,000	.	.....	.....
Mergenthaler Linotype *	3	1901	2,000	100,000	3	2,770	127,978
Missouri Pacific	4	1904	1,861	1,000,000	.	.....	.....
National Biscuit	3	1906	7,000	540,405	3	7,769	540,405
N. Y. Air Brake	3	1906	600	95,114	3	993	100,000
N. Y. Central *	4	1904	11,781	1,322,500	.	.....	.....
Northern Pacific *	4	1904	368	1,550,000	.	.....	.....
Norfolk & Western *	4	1904	2,911	890,000	.	.....	.....
N. Y. N. H. & Hartford *	1	....	9,521	546,854	1	17,573	1,218,781
North Butte *	3	1906	1,500	400,000[4]	3	4,600	430,000[4]
Pennsylvania *	1	....	51,543	6,259,553[2]	1	65,283	8,136,953[2]
Proctor & Gamble	1	....	1,098	67,500	3	1,606	142,500
Public Service of N. J.	3	1906	250	125,000	3	545	250,000
Pullman *	3	1901	7,744	740,000	.	.....	.....
Railway Steel-Spring	3	1901	1,195	200,000	.	.....	.....
Reading Company	1	1907	6,388	2,800,000[2]	1	5,781	2,800,000[2]
St. Joseph Lead *	1	....	315	250,000[4]	1	316	1,000,000[4]
Standard Oil of N. J.*	1	1901	3,832	974,486	1	5,847	983,383
Swift & Company *	3	1901	3,400	250,000	3	18,000	750,000
Union Bag & Paper	3	1906	1,950	270,000	3	2,250	270,000
Union Pacific	4	1904	14,256	2,083,298	6	20,282	3,161,714
United Fruit *	2	....	971	123,695	2	6,181	234,740
United Shoe Machinery	3	1901	4,500	826,243[4]	3	7,400	834,020[4]
U. S. Rubber	3	1901	3,000	471,915	3	3,500	750,000
U. S. Steel Corp.	1	1902	54,016	8,605,836	1	94,934	8,605,836
Utah Copper *	3	1906	1,194	450,000[4]	3	3,850	1,575,000[4]
Virginia Carolina Chemical	3	1901	1,360	399,844	3	5,549	459,844
Western Union *	1	....	9,134	997,886	1	12,731	997,886
Westernhouse Air Brake *	3	1901	1,904	219,000[3]	3	2,766	280,000[3]
Westinghouse Electric & Mfg.	3	1901	2,000	295,765[3]	3	8,500	813,805[3]
Int. Steam Pump (Worthington Pump & M. Corp.)	3	1901	500	211,125	3	1,900	315,838
Southern Pacific *	4	1904	2,424	1,978,492	.	.....	.....
Total			342,346	56,106,393		487,493	53,687,397

[1] The sources are as follows: (1) Letters from Corporations, (2) Standard Statistics Corporation Service, (3) Wall St. Journal, April 4, 1914, (4) Statistics of Railways of the United States, (5) Advertisement in Poor's and Moody's Manual Consolidated, 1923, (6) Corporation annual reports, (7) Personal visit to corporation. *Companies with only one kind of stock outstanding, whether common or preferred.

TABLE II.—STOCK AND STOCKHOLDERS OF AMERICAN CORPORATIONS, 1900–23

Source[1]	1913 68 companies		Source[1]	1917 47 companies		Source[1]	1920 51 companies		Source[1]	1923 66 companies	
	Number of shareholders	Number of shares		Number of shareholders	Number of shares		Number of shareholders	Number of shares		Number of shareholders	Number of shares
1	3,024	100,000	1	2,857	100,000	.	.....	.....	1	2,195	100,000
2	1,352	96,000	.	.....	.....	.	.....	.....	2	2,646	246,623[2]
1	10,402	600,000	1	9,223	600,000	1	13,229	600,000	1	16,090	600,000
3	4,041	180,000	.	.....	.....	.	.....	.....	7	3,605	180,000
3	2,938	281,472	.	.....	.....	.	.....	.....	7	5,953	437,013
1	5,578	500,000	1	8,490	500,000	1	9,957	500,000	1	10,596	750,000[3]
1	10,459	1,000,000	1	12,244	1,109,980	1	15,237	1,109,980	1	18,583	1,109,930
3	18,149	900,000	1	19,758	900,000	1	22,311	900,000	1	26,781	900,000
1	55,983	3,446,163	1	86,699	4,356,412	1	139,448	4,428,254	1	281,149	7,355,192
1	2,727	687,557	1	3,404	687,547	1	4,422	687,829	1	5,162	687,829
4	31,738	2,843,032	2	46,271	3,446,292	2	57,836	3,512,262	7	67,118	3,512,262
4	11,414	2,122,363	1	36,124	2,106,087	1	41,362	2,317,327	1	43,477	2,317,327
4	8,105	426,551	4	7,123	426,551	2	19,469	814,728	2	16,797	814,728
1	1,646	180,000	1	1,834	180,000	1	1,985	180,000	1	1,879	180,000
1	6,281	627,816	1	6,103	627,816	1	8,111	627,816	1	13,010	753,411
1	11,111	1,525,095	1	13,735	1,637,860	1	19,383	1,675,425	1	21,555	1,675,475
1	700	65,000	1	650	65,000	1	660	113,819[2]	1	675	113,819[2]
5	2,045	458,389	5	4,582	504,228	5	11,580	509,780	2	34,526	720,000
3	5,494	998,165	.	.....	.....	.	.....	.....	6	60,561	3,857,631[2]
4	6,483	425,030	4	8,124	425,030	4	10,500	425,030	.	.....	.....
1	1,959	603,242[2]	1	2,615	844,550[2]	1	3,276	844,550[2]	1	6,650	1,685,100[2]
3	3,315	160,906	.	.....	.....	.	.....	.....	7	3,647	169,651
3	2,697	455,110	1	6,592	1,196,682	1	11,624	1,340,074	1	14,141	1,634,722
3	3,254	256,985	.	.....	.....	.	.....	.....	2	11,650	2,088,507[2]
4	7,847	1,762,713	4	9,571	1,763,863	1	12,803	1,763,863	1	14,495	1,763,863
3	4,435	182,000	.	.....	.....	.	.....	.....	2	11,053	324,403
1	1,659	162,500	1	1,963	180,000	1	1,773	198,500	1	4,632	797,877[2]
1	12,271	1,013,812	1	12,950	1,015,125	1	17,338	1,390,269	1	36,008	1,799,187
1	2,184	310,000	1	2,112	310,000	1	1,879	300,000	1	2,383	310,000
1	19,540	2,099,901	1	26,716	2,494,782	1	40,195	2,494,782	1	44,523	2,494,782
1	4,685	1,500,000[2]	1	4,855	1,500,000[2]	1	6,747	1,500,000[2]	1	9,313	1,500,000[2]
4	11,819	2,326,231	4	20,549	2,336,862	4	22,650	2,336,862	7	22,379	2,332,518
1	10,776	1,092,926	1	10,302	1,092,041	1	12,870	1,092,941	1	19,470	1,202,226
1	3,929	400,700	1	4,509	446,702	1	3,903	448,332	6	4,522	448,332
3	2,007	132,000	.	.....	.....	.	.....	.....	2	2,326	132,000
3	5,923	531,753[2]	.	.....	.....	2	6,328	583,479[2]	2	7,141	584,668[2]
4	3,318	600,000	4	5,049	720,000	4	6,062	720,000	7	7,000	1,170,000
3	2,919	127,992	.	.....	.....	.	.....	.....	2	3,300	128,000
4	4,382	832,510	4	5,983	1,546,396	4	5,983	1,546,396	.	.....	.....
3	7,869	540,405	.	.....	.....	2	10,189	540,405	1	14,422	2,294,565[4]
3	865	100,000	.	.....	.....	2	2,255	100,000	2	2,455	300,000[2]
4	22,247	2,255,810	1	27,446	2,495,922	1	32,597	2,495,922	6	34,946	2,683,234
4	13,987	2,480,000	4	25,780	2,480,000	4	36,963	2,480,000	2	38,000	2,480,000
4	5,323	1,086,530	4	8,224	1,204,454	4	12,223	1,214,811	2	12,264	1,278,269
1	26,240	1,571,149	1	25,343	1,571,149	1	25,272	1,571,149	1	24,983	1,571,179
3	4,800	430,000[4]	.	.....	.....	.	.....	.....	7	4,900	430,000[4]
1	88,586	9,477,552[2]	1	100,038	9,983,468[2]	1	133,068	9,983,460[2]	1	144,228	9,983,468[2]
1	1,881	147,300	1	2,448	174,970	1	9,157	1,008,497[7]	1	11,392	1,230,893[7]
3	1,375	250,000	.	.....	.....	.	.....	.....	2	29,380	893,308[2]
3	12,363	1,200,000	.	.....	.....	.	.....	.....	2	21,000	1,350,000
3	3,244	270,000	.	.....	.....	.	.....	.....	7	5,400	270,000
1	6,624	2,400,000[2]	1	8,397	2,800,000[2]	1	9,701	2,800,000[2]	1	11,687	2,800,000[2]
1	671	1,000,000[5]	1	1,877	1,409,466[5]	1	2,096	1,550,343[5]	1	2,402	1,549,377[5]
1	6,104	983,383	1	7,351	983,383	1	8,074	983,383	1	81,070	22,134,800[6]
3	20,000	750,000	2	20,000	1,000,000	2	35,000	1,500,000	6	46,000	1,500,000
3	2,800	270,000	2	1,592	99,558	2	1,856	149,778	2	2,263	149,778
6	26,761	3,161,879	2	33,875	3,218,366	6	47,339	3,218,366	6	51,022	3,218,366
2	7,641	366,193	2	9,653	487,924	2	11,849	500,000	2	20,469	1,000,000
3	8,366	834,020[6]	2	6,547	1,785,055[6]	2	8,762	1,785,059[6]	2	10,935	1,806,535[2]
3	12,846	959,537	1	17,419	977,222	1	20,866	1,460,000	1	34,024	1,461,000
1	123,891	8,605,836	1	131,210	8,605,836	1	176,310	8,605,836	1	179,090	8,605,836
3	3,573	1,583,680[4]	.	.....	.....	.	.....	.....	2	4,700	1,624,490[4]
3	6,495	479,844	.	.....	.....	.	.....	.....	2	10,000	575,590[4]
1	12,790	997,886	1	20,434	997,886	1	23,911	997,889	1	26,276	997,886
3	3,341	392,519[2]	.	.....	.....	2	5,989	581,747[2]	2	7,300	787,478[2]
3	9,347	813,979[2]	.	.....	.....	2	20,077	1,795,504[2]	7	35,000	1,795,504[2]
3	2,000	315,838	.	.....	.....	.	.....	.....	7	5,336	289,066
1	15,757	2,726,724	1	34,346	2,728,234	1	41,139	3,264,414	1	58,279	3,443,809
	769,376	78,463,978		862,967	76,122,699		1,203,614	83,548,861		1,786,214	125,381,707

[1] Par value, $50.
[2] No par value.
[3] Par value, $25.
[4] Par value, $15.
[5] Par value, $10.
[6] Par value, $20.
[7] Par value, $100.

We now come to consider Table III (page 23), which presents a summary of the collected data, covering 218 companies, in 1923. The table shows that the number of stockholders in the 281 companies included in 1923 amounts to 3,416,066; also that the capital stock of these companies amounts to $16,973,878,520.[5] The 3,416,066 stockholders in the 281 corporations reported in 1923 cannot be compared with any figure for previous years, since the number of corporations reported differs so widely from year to year. Some other method of comparison has therefore to be devised.

The actual number of corporation stockholders in the United States may be computed, or rather estimated, in the following manner: Table III shows that in 1923 the average number of $100 par value shares held by each stockholder was 49.7, or an investment of $4,970 (par value) per stockholder. For the purposes of this computation, $70,230,476,755, which is the total capital stock (par value) of all corporations reported to have filed a capital-stock tax return for the year 1922, is assumed to be the total capital stock of all the corporations in the United States for that year. Since this is the

5. It should be noted that the companies included in this computation are representative only of types of industry, not of the size and wealth of the average corporation. This is obvious from a comparison with the figures contained in the Statistics of Income for 1920, which includes capital-stock tax returns for 1922. Since every "going" corporation is legally held responsible for filing a capital-stock tax return, it may be assumed that the total number of returns, which for 1922 is 326,100, includes substantially all the corporations in the United States. The total capital stock (par value) is $70,230,476,755, made up of $56,607,361,974 common stock and $13,623,114,781 preferred stock. In other words, about 3 hundredths of 1 per cent of the total number of corporations in the United States represents about 25 per cent of the total capital stock. Mr. J. Edward Meeker, Economist to the New York Stock Exchange, informs me that the value of all corporation stock listed on the New York Stock Exchange as of January 1, 1924, is about $22,000,000,000, or about 31 per cent of the figure used in this paper for the total capital stock of all corporations in the United States. His figure is obtained by using the par value for issues with a par value and the market price for all no-par stock.

only year for which a figure of this kind is available, it is necessary to compile a similar figure for the other years involved in the calculation.

The procedure is as follows. The *Commercial and Financial Chronicle* gives the issues of new capital stock from 1919 to 1923. Previously to that only the new listings on the New York Stock Exchange were given. It is quite true that the listings are much lower than the actual new issues of capital stock; but in the absence of figures of actual new issues, the new listings were used from 1900 to 1918. In this way the total capital stock figure for the United States was computed for the years

TABLE IV.—LISTINGS OF STOCKS ON NEW YORK STOCK EXCHANGE *

Year	Stocks	Year	Stocks
1918	$160,688,267	1908	$123,977,900
1917	616,957,245	1907	159,106,244
1916	479,263,618	1906	237,479,600
1915	319,506,950	1905	125,123,300
1914	130,383,000	1904	120,635,050
1913	264,714,115	1903	172,944,200
1912	463,935,140	1902	251,069,400
1911	255,897,215	1901	429,537,450
1910	304,681,590	1900	296,550,572
1909	297,253,037	....	

* As reported by the Commercial and Financial Chronicle.

1900 to 1923. For 1923 the total capital stock thus estimated amounted to $71,479,464,925. Dividing this figure by $4,970, the average holding of each stockholder in 1923, the result, 14,382,186, is the estimated number of stockholders in the United States for the year 1923. In 1920, the total capital stock amounted to $69,205,967,666 and the average number of $100 par value shares held by each stockholder was 57.3. Pursuing the same method for each year we get the results shown in Table V.

TABLE V. — ESTIMATED NUMBER OF STOCKHOLDERS, 1900–23

Year	Total Capital Stock of all Corporations in the U. S.*	Average No. of $100 Par Value Shares per Stockholder†	Estimated No. of Stockholders in the U. S.
1900	$61,831,955,370	140.1	4,400,000
1910	64,053,763,141	86.3	7,400,000
1913	65,038,309,611	87.0	7,500,000
1917	66,584,420,424	77.3	8,600,000
1920	69,205,967,666	57.3	12,000,000
1923	71,479,464,925	49.7	14,400,000

* Based upon the total capital stock of the corporations in the United States as reported in the Statistics of Income for 1920. Adjustments were made for new issues of capital stock from 1918 to 1923, and for new listings on the New York Stock Exchange from 1900 to 1918.

† As compiled and computed by the writer.

The estimated number of stockholders is probably weighted upward because of the fact that the corporations included in the computation have large capitalizations as compared with the general run of corporations in the United States. It is likely that stock is more widely distributed, or at least that the number of stockholders is relatively greater in the case of the larger corporations than in that of the smaller. Holdings in small corporations are very often concentrated in a single family, whereas large corporations often try to interest employees, consumers, and the general public in their stock.[6]

An element that offsets this upward weighting for the earlier years is the method of adjusting the capital stock by deducting the listings on the New York Stock Exchange. Since the actual new issues for these years are undoubtedly much larger than the listings, a correct adjustment for the earlier years would undoubtedly decrease the amount of capital stock outstanding and would thereby decrease the estimated number of stockholders for those years. Were it possible to make proper

6. A large number of stockholders has lately been cited for advertising purposes by several large corporations. See advertisement of General Motors Corporation in Life and the American Magazine for March and April, 1924.

adjustments for this error, the result would tend to make the rate of increase in the number of stockholders, for the period under discussion, greater than the figures indicate. It is believed that, in spite of the somewhat rough statistical methods used in some of the calculations, where exact figures are not available, the resulting estimates give a fairly trustworthy picture of actual tendencies. However, in order to prevent an uncritical acceptance of the details of the figures, care has been taken to set forth in detail the exact methods followed in arriving at the results.

The figures in Table V indicate that the largest increases both absolutely and relatively (using the immediately preceding year as a base) in the number of stockholders in the United States came in the periods 1900 to 1910 and 1917 to 1920. The increase from 1900 to 1910 was from 4,400,000 to 7,400,000, — an increase of 70 per cent, or an average annual increase of 7 per cent, — whereas, in the shorter period between 1917 and 1920, the increase was from 8,600,000 to 12,000,000, — an increase of about 40 per cent, or an average annual increase of about 13 per cent. What are the special reasons, if any, for the unusually large increases in these two periods?

In the period 1900 to 1910, which also shows a very large decrease in the average number of shares per stockholder, entrepreneurs and the promoters of the large trusts and combinations of the nineties were unloading their stock upon the public. In the transformation of a great many trusts into corporations during the early nineties, large blocks of common stock were assigned to promoters for their efforts in bringing together the various factors involved in the combinations. The balance-sheet offset against this stock was usually termed "good will." The panic of 1893, as well as the other disturb-

ances which occurred in the nineties, did not promote the distribution of the common stock so held. However, beginning in the early years of the next decade, this process was facilitated by greater prosperity and public confidence, and again was accelerated by increased earnings and wages during the war. The large combinations were actually beginning to yield returns on their common stock, thus enabling the investing public to join in the ownership with apparent comparative safety.[7]

The reasons for the large increases in the period 1917 to 1920, such as the financial education given the general public by the Liberty Bond campaigns, the larger incomes of the wage-earning classes, the shifting of investments on the part of the wealthy to tax-exempt securities, etc., will be considered presently. One influence, however (really a post-war development), making for an increased number of stockholders is the breaking up of par-value stock into 50, 25, 10, 5 and even 1 dollar shares.

III

This general diffusion of corporate stock ownership brings to the surface many interesting questions. Is the increase in the number of stockholders in corporations due to increased savings, which have gone into investments, or to a shifting of investments from bonds and savings bank deposits (which are also invested in

7. In this connection, it may be noted that in many cases the largest percentage of increase in the number of stockholders takes place in a year when the stock is put on a regular dividend-paying basis, or when the dividend has been increased. When a stock is paying no dividends, the general public does not seem to be interested. In the last ten or fifteen years, the stocks of many well established companies, such as the United States Steel Corporation, American Telephone and Telegraph Company, National Biscuit Company, National Lead Company, American Car and Foundry Company, etc., have established themselves on a secure dividend-paying basis and, for that reason, their stock has been purchased by small investors for permanent holding.

bonds) to investments in the preferred and common stocks of established corporations? Have the increased investments in corporations on the part of the public decreased the amount of savings through insurance? Is this increase in the number of stockholders due to a distinct increase in the investment funds available to the community, or is the increase in the number of stockholders merely due to the improvement of the status, as investments, of the common and preferred stocks of the corporations in the country? The explanation of an economic development of this kind, which must be due to a conjuncture of favorable circumstances, can best be approached by a consideration of certain contributing factors which have played a part in the general development. At least six contributing causes may be distinguished:

1. Stock subscriptions on the part of employees of corporations.

2. Subscriptions by direct customers of individual corporations, as in the case of the Consolidated Gas Company, American Telephone and Telegraph Company, and other public utilities.

3. Organization of labor banks.

4. Shifting of the investments of wealthy taxpayers from corporation stock, the dividends of which are subject to surtaxes, to tax-exempt securities.

5. Purchase of securities on the part of the large class of small investors developed by the Liberty Bond campaigns.

6. Increased savings among the lower income classes, made possible by higher wages in the war and post-war periods.

1. The comparative ease with which stock distribution among employees can be introduced, and the success which it has generally met, have led to its wide development. A recent report of the Metropolitan Life Insurance Company on Employee Stock Ownership Plans states: "If a complete list of companies having employee stock-ownership plans in one form or another were available, it would probably include several hundred concerns, many of which are comparatively small enterprises. It will be seen, therefore, that employee stock-ownership, while still in the experimental stage, has found its way into a sufficient number of companies as to command serious attention." [8] Figures as to the actual number of employees in the United States who have subscribed to the stock of their respective companies are not at present available. Several studies have been made, but no one of them is up to date or sufficiently inclusive.[9] It is obvious, however, even from the meagre data at hand, that employee stock subscription is an important factor in the general diffusion of stock ownership in the United States.

2. In the last few years, a great many corporations, especially public utilities, have made efforts to interest the direct consumers of their products as stockholders. A case representative of this tendency is that of the Consolidated Gas Company of New York. In an announcement, dated February 1923,[1] it is said: "The controlling considerations in making the issue as out-

8. A Report on Employee Stock-Ownership Plans, prepared by Policyholders' Service Bureau, Metropolitan Life Insurance Company.

9. National Civic Federation Report on Profit Sharing by American Employers; "Profit Sharing," Manchester Guardian-Commercial, 1921; National Industrial Conference Board, Research Report No. 29, p. 72. The latest study is that by Professor T. N. Carver. Financial World, May 31, 1924. The final figures of this study, however, have not as yet been published.

1. "P. S. S. 21."

lined in the terms and conditions, was to secure a large group of shareholders among the employees and consumers of the Consolidated Gas Company and its affiliated gas and electric companies." The American Telephone and Telegraph Company has made the development of the customers' market for stock a regular feature of company financing which has met with notable success.[2] The success met by the Consolidated Gas Company and the American Telephone and Telegraph Company is likely to encourage similar efforts on the part of other corporations and to accelerate the present movement toward stock distribution.

3. Inasmuch as labor banks are too recent a development (the first labor bank having been organized in 1920) to provide the background necessary for comparisons, the number of stockholders in these corporations was not included in the computation presented in Table VI. Had such stockholders been included for the year 1923, the total number would have been increased, for the labor banks limit the number of shares that may be held by one stockholder. In some cases the maximum that may be held is two, while in no case is it more than ten. A complete list given in the *United States Labor Review* for February 1924, shows that there were 26 labor banks then operating in the United States. Eight of the banks do not furnish the necessary data. The

2. An interesting and perhaps peculiar instance is that of the National Biscuit Company. "There is only one class of stockholder we are really interested in keeping track of and that is, the number of women stockholders, as they are the real purchasers of this company's product. On December 31, 1923, we had 7,283 women stockholders; virtually 50 per cent of the number of stockholders of the company are women. We have not tabulated the number of shares of stock being held by them; the only thing we are really interested in is to note the constant increase in the number of women stockholders. On January 1, 1914, we had but 4,140 women stockholders, so you can see there has been a handsome increase in nine years in the number of women stockholders." (Letter from G. P. Wells, Secretary, to the writer, February 29, 1924.)

TABLE VI. — NEW ISSUES OF CAPITAL STOCK OF AMERICAN CORPORATIONS, 1919–23 *

	New Capital	Refunding	Total
1923			
Preferred stocks	$335,108,297	$71,609,830	$406,718,127
Common stocks	340,374,101	5,166,760	345,540,861
Total	$675,482,398	$76,776,590	$752,258,988
1922			
Preferred stocks	$296,331,950	$39,956,400	$336,288,350
Common stocks	277,173,822	10,529,625	287,703,447
Total	$573,505,772	$50,486,025	$623,991,797
1921			
Preferred stocks	$71,252,500	$3,675,600	$74,928,100
Common stocks	194,904,565	6,057,280	200,961,845
Total	$266,157,065	$9,732,880	$275,889,945
1920			
Preferred stocks	$469,989,137	$21,268,533	$491,257,670
Common stocks	554,519,952	14,629,830	569,149,782
Total	$1,024,509,089	$35,898,363	$1,060,407,452
1919			
Preferred stocks	$726,146,085	$66,859,700	$793,005,785
Common stocks	710,203,801	43,481,560	753,685,361
Total	$1,436,349,886	$110,341,260	$1,546,691,146

* Commercial and Financial Chronicle, vol. 118, p. 362 (January 26, 1924).

capital stock of the other eighteen is $4,900,831. Since the average number of $100 par value shares per stockholder for 1923, as given in Table IV, was 49.7, indicating an average investment of $4,970 per stockholder, the addition of the labor bank stockholders, who hold from two to three shares (par value $100) each, would reduce the average holdings and thereby increase the number

of stockholders. Moreover, should these banks continue to prosper in the future as they have in the past, their numbers and their stockholders will further increase.

4. It was shown in Table I that the class having incomes of $20,000 and over received 64.7 per cent of the total dividends reported in 1917, and only 46.8 per cent in 1921. The apparent reason for this decrease is that it has been to the advantage of the wealthier taxpayers to invest their money in tax-exempt securities, thereby leaving the field of taxable securities, such as corporation stocks and bonds, to investors with smaller taxable incomes, who have little or no surtaxes to pay. The result has been a great extension of investment banking to the lower income classes — the purchasers of securities on a small scale. Tax-exempt securities in the United States held outside the Treasury and Sinking Funds have increased from $4,086,000,000 as of December 31, 1912, to $12,321,000,000 as of December 31, 1923 — an increase of over 200 per cent.[3]

5. The Liberty Bond campaigns undoubtedly induced a great many people, who previously had hoarded actual cash or had merely kept savings-bank accounts, to invest their savings in securities. They went even further by encouraging thrift and developing the habit of saving and investing. Large sums were expended in teaching the wage-earners to save and invest. Immediate results were the sale of millions of dollars in Liberty Bonds and War Savings Certificates and the establishment of school banks and of other small savings organizations. Perhaps the most permanent result of these campaigns has been the change in the point of view of the average person toward investment. A leading advantage claimed for the "capitalistic" economic

3. Estimated amount of wholly tax-exempt securities, February 29, 1924, published by the Treasury Department, April 5, 1924.

order is that it places the savings of the whole community at the command of those individuals best able to use them for maximum production. Under the present economic system, increased savings are generally recognized as signs of economic progress. It is essential, however, that these accumulated savings be entrusted to those in a position to use them most advantageously in the further production of goods. The figures in this paper indicate a notable growth in the number of people who realize the advantages of saving and investing.

The growth of thrift is also indicated by figures published by the Savings Bank Division of the American Bankers Association, showing that, while the total amount of savings deposits reported by the banks and trust companies of continental United States as of June 14, 1912, was $8,425,275,000, they had increased by June 30, 1922, to $17,331,479,000 — an increase of 105.7 per cent.[4] The number of savings accounts reported for June 30, 1922, was 30,240,940, whereas in 1912 only 12, 584,316 were reported. It is pointed out, however, that altho thirty million savings accounts are officially reported, "many of the prosperous states of the South and West are not represented, neither does it include any report or estimate of the number of persons who either hold time certificates of deposit or who have deposited through the postal savings system. The most surprising and encouraging increase occurs in the mutual savings banks deposits, which increased from $3,595,-026,000 in 1912 to $5,582,812,000 in 1922, an increase of over two billion dollars or 58 per cent." Mutual savings banks deposits are usually considered as the savings of the wage-earning classes, a fact which makes this in-

4. Savings Deposits in Saving Banks, other Banks, and Trust Companies of the United States on June 14, 1912 and June 30, 1922, compiled and published by Savings Bank Division of American Bankers Association, Tables 1, 2, p. 4.

crease especially significant. This increase appears to dispose of the possibility that the increase in the number of stockholders in the United States, especially among the lower income classes, is due to a shifting from savings-bank deposits to investment in corporation stocks. The conclusion, in view of the unusual increase in savings-bank deposits, is that the increase in the number of stockholders among the wage-earning classes represents new and additional savings.

Another form of savings, represented by life insurance, shows even larger increases in the last ten years. In 1913, when there were 250 companies with a capital stock of $51,165,649, the total insurance in force was $15,-555,901,171. In 1922, with 286 companies with a total capital stock of $77,491,359, the total insurance in force amounted to $50,290,710,180, the increase being more than 300 per cent.[5] It is clear that the increase in the number of stockholders is not due to a shifting of savings from insurance to investment in the capital stock of corporations. There have been parallel increases in all three forms of investment, savings-bank deposits, insurance, and holdings of corporation stocks.

6. It is generally agreed that the wage-earning classes have profited economically from the readjustments brought about by the war. The staff of the National Bureau of Economic Research have concluded: "The net effect of our participation in the war was to diminish somewhat (at least temporarily) the inequality in the distribution of American incomes. . . . If we consider the 5 per cent of those gainfully employed who had each year the largest incomes, we find that their share in the aggregate of personal incomes declined from about 33 per cent in 1913–16 to about 25 per cent in 1918–19."[6]

5. Insurance Year Book, 1922, p. 422.
6. Income in the United States, vol. i, p. 146.

The figures presented in this paper indicate that the concentration of ownership of American corporations is diminishing. The proportion owned by the higher income classes has decreased, while the percentage owned by the lower income classes has increased. It is difficult at the present stage of its development to estimate the effect and the possibilities of this tendency toward a more democratic ownership of American corporations. It is not believed that this tendency toward a greater diffusion of stockholding is the result of a plan carried out in accordance with any preconceived theoretical basis; it is merely one of the steps in the evolution of the present economic order. Fortuitous variations, such as economic changes brought about by the war, employee and customer stock subscriptions, labor banks, etc., have presented themselves and have fitted into the economic order of the day so successfully, that they have not only maintained their place, but have spread very rapidly.

The principal quantitative result of this study is that there has been an increase from about 4,400,000 stockholders in 1900 to about 14,400,000 in 1923, or about 250 per cent. There has been, furthermore, a shifting of ownership from the "wealthy few" to the "middle" and "wage-earning" classes.

NATIONAL LEAD COMPANY,
NEW YORK.

H. T. WARSHOW.

"COMPETITIVE" COSTS AND THE RENT OF BUSINESS ABILITY

SUMMARY

Current tendencies in the study of cost theory, 41.—The indeterminate meaning of "market" and "competition" in economic literature, 47.—Discontinuity of retail markets; the fallacy in comparing the costs of firms serving different markets, 51.—"Marginal" buyers not effective in stimulating significant inter-market competition, 53.—The question of competition between wholesalers of clothing and of store equipment, 57.—"Competitive" costs in the great staple industries, 58.—Low costs and high profits not necessarily due to superior entrepreneural ability; devices for avoiding competition; advantages of priority; temporary and permanent advantages, 61.—Does competition compete? Why does not competition result either in uniform costs or in monopoly? 65.—Need of caution in inductive study, 66.—Need of study of the life histories of individual firms, 67.—Rent of superior entrepreneural ability inconsistent with the assumption of free price competition, 69.

THE ideal of economy and efficiency, for any economic system, must be to put each unit of productive power where it will cause the largest net increase of product. It must be utilized at that point in the productive process at which the resultant net increase from its use will be larger than it would be if the use were made at any other point. This is the basic ideal of political economy, from Adam Smith's initial argument for freedom to Carver's balanced economic system [1] and Cassel's erudite analysis of the function of the pricing process.[2] Net product can be ascertained, of course, only by deducting cost from gross product. It follows that a thoro knowledge of costs is a prime essential of economic efficiency,

1. "Some Probable Results of a Balanced Industrial System"; American Economic Review, Supplement, March 1920, pp. 69–77. The idea is explicit in all of Carver's economic thinking.

2. The Theory of Social Economy, 1924, bks. i and ii.

and that, either under the utmost individual freedom and motivation by self-interest, or under conditions in which every person is actuated only by the impulse to serve society at large in the most effective way, the more accurate the knowledge of costs, the closer can be the approach to ideal efficiency in the use of productive capacity. It is therefore not to be attributed to any vagary of fashion in economic thinking that economists at the present time show a very evident tendency to revert from the pleasant by-ways of Austrian utilitarianism, which in many respects proved to be a blind alley, and to take the high road indicated a century ago by the Ricardians. This renewed interest in the theoretical relations between cost and price is one of the most outstanding features of economic theory today.

Should we seek for the causes of this tendency, we should find them, in general, in the reaction to the over-refined subtleties of "psychological" economics, and in dissatisfaction with the rough-hewn analyses of the classical writers; and specifically in the rise of a number of conditions and movements in which the economists have had little part.

First among these have undoubtedly been the development of the corporate form of business enterprise, the growth of large-scale production, and the tendency to combination and monopoly. These movements seemed to require, for the protection of the public, a well-grounded policy of governmental regulation. An intelligent policy could be forthcoming only when an adequate machinery and theory of cost analysis was at hand. This the economists were not in position to advance, because the older "real-cost" theories were practically inapplicable to the problems that the legislatures, the courts, and the people had to face. For a long time, the economists, if they perceived the new significance of

cost at all, were content to follow, when they should have been in position to lead. Eventually, however, this outer pressure, especially the fact that the problem of costs and valuation was constantly before the courts, had a profound effect in shifting the center of theoretical attention.[3]

Secondly, came the development, in the business world, of cost accounting. Whatever may have been the causes or motives leading to this new device for the promotion of industrial efficiency, it was one that could not but stimulate the interest of theorists, especially those primarily concerned with industrial corporation, railroad, and public-utility economics.

In the third place, and more recently, the exigencies of wartime price regulation have acted as a powerful stimulus to economists to reconsider the whole problem of costs. The experiences of the governmental price-fixing agencies, utilizing largely cost data previously garnered by the Federal Trade Commission and the Tariff Commission, have been the occasion for some significant additions [4] to an already somewhat lengthy list of recent articles on the theory of costs in relation to price.

Finally, with the reiterated insistence on the part of some leading economists (notably Davenport and

3. For a striking example of this shift, see J. R. Commons, Legal Foundations of Capitalism, 1924.

4. Outstanding among these is F. W. Taussig, "Price-fixing as Seen by a Price-fixer," Quarterly Journal of Economics, February 1919, vol. xxxiii, pp. 205–241. See also the following articles in this Journal: P. G. Wright, "Value Theories Applied to the Sugar Industry," November 1917, vol. xxxii, pp. 101–121, and "Cost of Production and Price," May 1919, vol. xxxiii, pp. 560–567; K. Simpson, "Price-fixing and the Theory of Profit," November 1919, vol. xxxiv, pp. 138–160, "A Statistical Analysis of the Relation between Cost and Prices," February 1921, vol. xxxv, pp. 264–287, and "Further Evidence on the Relation between Price, Cost, and Profit," May 1923, vol. xxxvii, pp. 476–490; F. W. Taussig, "A Contribution to the Study of Cost Curves," November 1923, vol. xxxviii, pp. 173–177.

Mitchell) that the only economic theory capable of practical promise, even for the reformer, is a study of the price system,— price economics,— and with the growing tendency to make departments of economics appendages of schools of business administration, economists began to take the lead. Some had been called into government positions requiring high advisory and directive capacity, others answered the call of industrial and banking research bureaus, and still others, maintaining their academic connections, were instrumental in the establishment of university bureaus of business research. While the invasion of the economics curriculum by technical business subjects has had a deleterious effect upon the teaching of economics, viewed from the standpoint of liberal education, and while there has been an unfortunate tendency to commercialize the point of view of not a few of the younger men, the new interest in the facts and problems of business is already yielding a by-product of advantage to economic theory. It is taking the theorists out of their mental closets and forcing them to face, indeed to seek, the facts of our business system as it is. The activities of the bureaus of business research are especially stimulating in this direction.

More particularly in point for the present article is the fact that they are gradually amassing statistical data of costs and prices. Moreover, they will have more freedom to put these data into shape suitable for theoretical analysis than have the Federal Trade Commission and other governmental bureaus. All this may be regarded as part of the tendency to a greater use of the inductive method in economic theory, and a specific expression of the conviction that a thoro factual and theoretical study of entrepreneurs' costs is the key, not to the final, but to the first and most difficult, door to the economic mystery.

It is quite evident, as Taussig intimates,[5] that the study of cost and prices is entering upon a new period of development, a period in which theorists will make extensive use of the statistical data and analyses furnished by the research bureaus. This being so, it is perhaps in order to raise certain questions and to suggest certain cautions and criticisms with regard to the pitfalls which await the unwary in this most difficult terrain. The present article is confined to bringing out the caution that, if we are going to draw conclusions as to the rôle which competition and superior entrepreneural talent play in the drama of cost and price, we must first be sure that the data from which we draw our conclusions pertain to the same market, and that that market is in some true sense competitive.

The main phases in the historical development of cost doctrine may be stated as follows: (1) a sharp distinction between the extractive and manufacturing industries, and the setting aside of land rent as not a part of cost (the Ricardians); (2) the recognition of increasing and constant costs (Mill), and, later, of decreasing costs; (3) an attempt to analyze dynamic conditions, leading to (*a*) study of the determinants of price over short and long periods and to the concept of the representative firm (Marshall), and (*b*) sharp distinction between the conditions of price-determination when advantages between different producers are permanent and when they are temporary (Taussig); (4) a prolonged, if somewhat desultory, search for the identity of the representative firm; (5) growing uncertainty as to the meaning or reality of "normal price," with the conclusion, on the part of some theorists, that normal price is indeter-

5. "A Contribution to the Study of Cost Curves," Quarterly Journal of Economics, November 1923, vol. xxxviii, pp. 173–177.

minate;[6] (6) sporadic attempts, which unfortunately have made little impression, to bring out the fact that there is a monopoly-like element in competitive price;[7] (7) the present tendency to reach out for a more realistic method through the collection and analysis of statistical data of costs, and through such procedure to bring both theoretical hypotheses and conclusions into closer conformity with facts.

The articles above mentioned (p. 43) are excellent examples of this tendency. To them must be added the recent monograph on Competition in the Retail Distribution of Clothing[8] by Professor Secrist, which, with the articles mentioned, affords the occasion for the present discussion. Secrist's monograph is one of the results of a laborious collection of data from retail firms all over the country. It is brief but meaty, and the results are set forth in terms of refined statistical analysis. It has justly called forth favorable comment from Taussig,[9] and should be read by every student of cost theory. Nevertheless, it seems to the present writer that it fails at the crucial point, as in lesser degree do the other articles, to substantiate its main conclusion. Taussig, Wright, and Secrist all conclude, in effect, that in spite of the equalizing tendencies of competition, permanent differences in cost of production (in Secrist's study, in

6. For instance, J. M. Clark, "A Contribution to the Theory of Competitive Price," Quarterly Journal of Economics, August 1914, vol. xxviii, pp. 747–771.

7. See especially, H. L. Moore, "Paradoxes of Competition," Quarterly Journal of Economics, February 1906, vol. xx, pp. 211–230; H. G. Brown, "Competitive and Monopoly Price-making," ibid., August 1908, vol. xxii, pp. 626–639.

8. Northwestern University School of Commerce, Bureau of Business Research, Series II, No. 3, 1923. See also his Expense Levels in Retailing — A Study of the "Representative Firm" and of "Bulk-line" Costs in the Distribution of Clothing, Series II, No. 9, 1924.

9. "A Contribution to the Study of Cost Curves," Quarterly Journal of Economics, November 1923.

costs of retail merchandizing) persist between different firms in the same industry, not only in the extractive industries, where differences of advantage have long been recognized as permanent, but in manufacturing and merchandizing, where the older theory of competition, and especially J. B. Clark's courageous logic, had held that under free competition there must be a pronounced tendency to uniform costs. From this it is an easy inference, which our writers show little hesitation in making, that the cost differences persist because of superior managerial ability in the low-cost firms, and consequently that the profits received by these firms may be regarded in large measure as rent of ability — thus substantiating Walker's almost forgotten theory.

Secrist's study is an advance over those based on the data derived from the Federal Trade Commission and the Tariff Commission, in that he traces the costs of some 170 individual firms, year by year, over a period of five years. He does show that there is a continual shifting in the position of firms, some being now above the average cost, now below; but he shows also that there is a strong tendency toward stability of costs as we approach the average. The firms which stand above or below the average, or fall within the "representative" or "bulk-line" zone, are by no means always the same firms, but "the tendency is present in each city-group for stores having expenses above or below the average in a given year to have expenses of the same type relatively to the average in the second year." [1] Despite the revealed variations of costs for any given firm from year to year, Secrist is thus in position to hold that "the 'rent' of business ability seems also to apply to distributive industries." [2]

1. Competition in the Retail Distribution of Clothing, pp. 16, 17.
2. Ibid., p. 10.

All three investigators reach the same general conclusion by the same method of comparing costs. They construct a "cost curve" for a given industry by placing the low-cost firms at the extreme left and then arranging the others in order of costs until the diagram terminates with the extreme high-cost, extra-marginal firms at the right. Wright is struck by the fact that for all the commodities studied "there was the same ogee curve, sometimes steep, sometimes more nearly horizontal, but always a curve of the family type and in all cases, where the data were at all complete, crossed by the average price line near its right-hand extremity."[3] Taussig gives as representative curves of this type curves for the costs of beet sugar in 1917–18, Douglas fir lumber in Washington and Oregon, and bituminous coal in southwestern Pennsylvania in 1917.[4] Wright gives curves for the cost of producing cane sugar in Porto Rico, Cuba, and Hawaii, and beet sugar in the United States.[5] The data for sugar fortunately permit separate curves for the cane (or beet) costs and the factory costs. Taussig further cites as products "turned out by many competing producers," and showing the same type of non-uniform cost curve, lumber, copper, iron ore, iron and steel products.[6] Simpson analyzes Trade Commission cost data for paper, canned salmon, sugar beets, and copper.[7]

Two questions must be raised with regard to conclusions as to competition, and as to profits as reward for superior managerial ability, in these or any other indus-

3. "Cost of Production and Price," Quarterly Journal of Economics, May 1919, p. 566.
4. "Price-fixing as Seen by a Price-fixer," Quarterly Journal of Economics, February 1919.
5. "Value Theories Applied to the Sugar Industry," Quarterly Journal of Economics, November 1917.
6. Op. cit., p. 218.
7. "A Statistical Analysis of the Relation between Cost and Price," Quarterly Journal of Economics, February 1921, pp. 264–283.

tries for which cost data are available. First, do the data render it possible to isolate the advantage due to location and possession of superior sources of supply of raw material, — advantages which are only in a remote sense capable of being attributed to superior ability, — and thus to put ourselves in position to compare manufacturing or merchandizing costs? Secondly, do the concerns whose costs are compared serve the same market? If they do not, it is idle to speak of them as competing, and conclusions drawn from such data as to the persistence of non-uniform costs and rent of business ability in spite of competition are based upon a dubious foundation.

It is necessary to emphasize the fact that all these analyses are supposed by their authors to be analyses of *competitive* costs. Secrist's monograph is by title a study of the effects of competition. In other words, each writer assumes that the firms whose costs he arranges in his "cost curve" are mutually competing firms.

One will have to make a long search in economic literature before he finds any serious discussion of the nature of free competition. The nature of competition was simply taken for granted, in a way which now, from the standpoint of the needs of a searching analysis of competitive *versus* monopoly elements in price, seems curiously superficial and negligent. But one ideal will be found in nearly every treatise, whether French, German, or English: when competitive prices or costs are mentioned, one is to understand the prices or costs of products produced or sold by concerns which belong to the same market. The old dictum that there can be but one price in the same market was derived from the assumption that competition extends as far as the market and no farther.

In the attempts to define a market we find no exact

agreement. Some of the attempts to define a "perfect competitive market" would assuredly involve their authors in paradoxes from which they could extricate themselves only by admitting that "free," competition is, if not impossible, at least humanly very improbable.[8] Not to go into the difficulties involved in the concept of a perfect competitive market, however, we may gather from the texts that the two main features of what is commonly called a competitive market are, first, a certain contact and "organization" between all the traders; and second, one price, at a given time, for all. Economists grow somewhat hazy when they consider the relation of place or area to market. Some, with Marshall,[9] soften the evident difficulty of definition by speaking of special and general markets. Others, with their minds on the great staples and wholesale trade, with Davenport,[1] minimize the geographical element, and in effect hold that "the market is anywhere and everywhere, if only there are recognized and appropriate demand and supply schedules." Perhaps as good a definition as any we find is in the book that goes by Ely's name: "We mean by the market, not a particular place for buying and selling, but the general field within which the forces determining the price of a particular commodity operate." [2]

Fundamentally the term market implies not so much a specific place as a body of buyers and sellers in such more or less organized relation to one another that the

8. Jevons's discussion (Theory of Political Economy, 1871, pp. 84–90) is particularly open to this criticism, for he assumes that each trader has perfect knowledge of what every other trader is doing and intends to do.

9. Industry and Trade, 1919, p. 182.

1. Davenport, Economics of Enterprise, 1913, p. 383. Cf. also, for examples, Clark, Essentials of Economic Theory, 1907, p. 85; Seligman, Principles of Economics, 7th edition, 1916, p. 224; Pantaleoni, Pure Economics, 1898, p. 164.

2. Outlines of Economics, 3d edition, 1916, p. 154.

supply and demand of the commodity are at any given time equalized through the medium of a single price. But while markets range all the way from local markets for locally produced and consumed commodities to "world markets" for the great staples, and while, consequently, the organization of buyers and sellers often transcends the limits of a specific geographical area, place nevertheless remains, both in theory and in fact, a very important basis of market relations. Wholesale markets may be nation-wide or world-wide; but retail markets, at least on the selling side, are practically all distinctly local.

Retail markets are discontinuous.[3] Each town or locality constitutes a market. Retailers may buy from widely scattered manufacturers and wholesalers, but they sell, in the main, only to residents of a restricted area. In some lines of business, this area may be the whole town or a whole metropolitan area; in other lines it is much more limited. In these days of mail-order houses, quick transportation, and the habit of travel, there is, of course, some overlapping of these local markets, but the vast bulk of retail sales is made to fellow townsmen of the retailer. In considering the effects of competition in retail merchandizing this fact is all-important; and it is by no means of negligible import even in wholesaling and manufacturing.

Moreover, even within the same fairly limited geo-

3. Fetter, in a highly theoretical attempt to determine the geographical limits of a market, appears to hold otherwise. "If two selling markets, A and B, are geographically so situated that goods may be shipped from one to the other, obviously the prices in the two markets cannot (except by accident and temporarily) differ by more than the amount of the freight (and incidental expenses) between the two points." — "The Economic Law of Market Areas," Quarterly Journal of Economics, May 1924, p. 521. But he has assumed an indefinite and somewhat undefined "trading under something like true competitive conditions" — an assumption which, for the present discussion, begs the question.

graphical area, a fair-sized city or a metropolitan area, there are distinct, tho not absolutely independent, markets, defined by location and by class of custom. Non-competing groups are common in the same business as well as between different industries.

Secrist regards the retail merchandizing of clothing as thoroly competitive. "The fundamental condition in the trade . . . is found in the competition which extends to expenses, service, prices, and standards of merchandising." [4] Goods "are sold competitively by a horde of dealers closely in touch with customers' needs and demands. . . . The field may be freely entered and almost as readily quit." [5] Taussig, also, avers that the trade is "completely and absolutely competitive," and that "further, it is carried on by all sorts and kinds of business units, big and little, scattered all over the country." [6] It is evident, therefore, that both Secrist and Taussig consider it admissible, in constructing competitive cost curves, to include all the firms in the industry, however widely scattered, geographically, they may be; and there is little in the articles by Simpson and Wright to show that these writers perceive the fallacy involved in lumping together concerns which may be, and to some extent certainly are, serving different markets.

Secrist gives, first, data and results for all retailers lumped in one statistical table. Then he segregates and classifies firms by order of size, and finally by size of the cities in which they are located. Such classifications may be in point for some purposes, but not for the one in hand — the investigation of competition in costs of

4. Competition in the Retail Distribution of Clothing, p. 23.
5. Ibid., p. 24.
6. "A Contribution to the Study of Cost Curves," Quarterly Journal of Economics, November 1923, p. 173.

doing business. Plot the costs of all the firms in cities of, say, 10,000 to 20,000 population, from Maine to California. Of course we get the "familiar positively inclined curve." But it does not mean anything. The fact that a firm in Eastport, Maine, may chance to have lower selling costs than one in Bakersfield, California, has no significance for a study of retail competitive price. That the curves for the different city groups (classified by size of population) also turn out to have the same general shape seems to the present writer without significance. The generalizations which Secrist draws[7] with regard to the striking uniformity in the shape of the curves, the presence of a small number of stores with very high or very low expenses, the similar position of the curves year after year, have no real bearing on the problem of competition in relation to costs and selling prices. If the stores in each town of 10,000 to 20,000 population were in "competition" with those in every other town of the same size, the curve for this group would be significant, but they are not. The clothing stores of Boulder, Colorado, and those of Urbana, Illinois, cannot by any stretch of the imagination be regarded as in the same (selling) market, that is, as competing with each other for the same customers. The stores in these two towns, or in any two towns not closely contiguous to each other, constitute non-competing groups. The relation of competition to costs and price must be sought where there is, presumably, competition, that is, between the individual stores of Boulder and the individual stores of Urbana, respectively.

Furthermore, in a large city, there are zones or levels of trade which are strongly suggestive of the presence of non-competing groups of firms even within the same general area. This fact is due to two causes. The first is

7. Competition in the Retail Distribution of Clothing, p. 9.

that purchasers will not ordinarily go very far out of the "recognized" shopping district to make their purchases. The second is that different stores cater to very different classes of trade. Not only does an "exclusive" store on Powell or Kearny Street, San Francisco, not compete with stores in Los Angeles or Seattle; it has little active competition with stores of a more bourgeois complexion on Market Street in San Francisco. There are stores on Michigan Avenue in Chicago which college professors and such persons do not dare to enter; there are some on South State Street which, having entered them once, they have no desire to enter again. Merchandizing in New York runs all the way from push-carts to cloistered mercantile sanctuaries where *on ne parle que français*. Between the clothing shops on Fifth Avenue and those on Sixth there is probably little competition. The vertical or geographical division between the two districts is but an expression of the horizontal, or class, distinction which segregates buyers and sellers into fairly distinct, non-competing groups or markets. Even to group all the stores in the same city in the same cost curve therefore involves some error, if the object be to investigate competitive costs.

It may be held, as Professor Carver holds,[8] that classes of "trade" shade off into one another. "There are," he avers, "always people who are tempted to enter the exclusive store and pay the high price, and the same people are tempted to go to the more bourgeois store and pay the lower price." Where there are enough of these middle-class purchasers, he concludes, "there is real competition between the two classes of stores." Ordinarily, however, the type of buyer he has in mind avoids the high-priced store except when it is having a clearance sale of old goods at cut prices. At other times

8. In a comment on the present article in manuscript.

its high prices hold, practically uninfluenced by what other stores are charging; and whatever "real competition" may mean, it does not mean price competition or price uniformity. The properly situated exclusive store can make high profits simply because it can sell "exclusiveness" to hyperfastidious persons who can afford to pay a fancy price for what possibly has no very great cost to the seller. The extremely exclusive store will avoid the floating custom Professor Carver has in mind by raising prices high enough to scare it away, by having no "sales," and even by instituting a policy of selling only to those who have made appointments beforehand.

Generally speaking, the only competition a retailer has to face from firms outside his own town is that of the mail-order houses. In some circumstances these concerns may exercise a considerable competitive pressure; but local merchants doubtless exaggerate it, and in the clothing business, especially, it can hardly be of much significance. Even the farmer or the denizen of Gopher Prairie now wants to try on a suit before he buys it. The mail-order competition of the "woolen mills" concerns may be appreciable in certain places, but it has not made inroads on the local ready-made clothing trade remotely comparable to what the latter did to the local custom tailors.

Professor Carver thinks there is more competition between the different retail markets than the above paragraphs take account of. There are always, he holds, "marginal buyers who live somewhere near the boundary between the two markets." Hence he thinks that "if there are enough of these marginal buyers, there will be real competition between the two markets." Much evidently here depends upon the "if." The actual existence of a significantly large number of such marginal buyers cannot be demonstrated by hypothesis. If we

found that prices for identical kind and quality of goods in two geographically contiguous markets did not differ materially, we might legitimately infer that substantial price uniformity was due to the influence of these marginal buyers. Professor Carver's thought is not, however, to the point. Even if marginal buyers do stimulate competition between two contiguous markets, — say St. Paul and Minneapolis, Dallas and Fort Worth, or Lasalle and Peru (Illinois), — they cannot directly stimulate it between two widely separated places. It still remains true that stores in Boston and those in Binghampton do not compete for the same customers. At least, the only way to conclude that competition is operative between them is to assume that the effects of local competition are propagated across the country in a sort of wavelike movement, from one town to the next, and so on. If this be the assumption under which all the clothing sellers in the country are considered to belong to one vast market, we can infer that competition in any such "market" will work out to uniform prices only in the "long run" — which experience demonstrates to mean practically never.

Actual retail prices for a large variety of commodities in specific and scattered markets — small towns as well as great cities — are not at hand. In any case they would need very careful interpretation before any very definite conclusions were drawn from them as to the presence or absence of competition. Vagaries of freight rates and other disturbing factors would have to be given due consideration, and this would be a complicated task. Still, the retail prices of food and certain dry-goods, for instance, published by the United States Bureau of Labor Statistics, occasion scope for query. Why, for example, is round steak 50.9 cents a pound in Boston and 38.3 in Bridgeport? Why does canned red

salmon fetch 33.2 cents a pound in New Haven and only 30.3 in Providence? Why is bleached sheeting 76.5 cents a yard in Boston as against 70.6 cents in Portland, Maine? Why, in four neighboring cities like Cincinnati, Columbus, Cleveland, and Detroit, should the prices of sheeting be respectively 74, 80.9, 73, and 75.9 cents a yard? Why should a cotton blanket cost $4.615 in Houston and only $4.175 in Dallas, or $5.06 in Cincinnati as against only $4.26 in Columbus? [9] The National Industrial Conference Board states that for clothing its experience "has shown that there is considerable range of prices from one city to another," and further, that "the prices quoted apparently are more the result of the buying and selling policies of the separate stores than of geographical location."[1] They find, it is true, that "when the prices of the individual items are combined so as to represent annual clothing consumption, the differences tend to disappear, so that an index for the country as a whole is probably sufficiently representative for individual cities." This fact, however, is beside the point of the present discussion, since we are not concerned with family budgets but with the prices of specific commodities.

We are forced to conclude, therefore, that in lumping and classifying his cost data as he does, Secrist pursues an erroneous method of analyzing the presence and effects of competition.

A possible influence of competition may be inferred, perhaps, vaguely and indirectly, from the following conclusions as to the position and movements of firms with regard to rank in costs:

9. Quotations for food are from the Monthly Labor Review, April 1924, and are for February 15, 1924. Those for dry-goods are from the Monthly Labor Review, August 1923, and are for June 15, 1923.

1. Letter to the writer, May 28, 1924.

> For the stores occupying "exposed" [extreme high cost or extreme low cost] positions in the first year, there is a tendency — varying directly with the extent to which store expenses deviate from the average in the first year — for expenses to gravitate toward the average in the second year. That is, such stores seek out, or are forced toward, more normal levels in the second year. On the other hand, there is a tendency — less pronounced, but nevertheless present — for stores with expenses at or near such levels in the first year, subsequently to be forced out toward the "wings."
>
> For stores which in successively paired years have expenses *below* the average, there is a more pronounced tendency to increase in subsequent as compared with given years, than there is for such conditions to obtain for stores with expenses *above* the average.[2]

If high-cost firms tend to gravitate toward average costs, that may, in the absence of evidence to the contrary, be taken as an indirect indication of the pressure of competition. But why should stores at or near normal cost levels this year tend subsequently (that is, within the five-year period covered by the study) to be forced out toward the wings? Is this movement a mere arithmetical reflex of other stores moving in toward the average, or is it an indication of carelessness on the part of firms which have, for the time being, attained fairly satisfactory cost levels? or, again, is it a suggestion that there are present accidental conjunctures, giving rise to advantages and disadvantages attributable neither to competition nor to superior managerial ability? We need far more detailed analysis before any definite answer to these questions can be ventured.

It may occur to the reader that, while clothing stores sell in limited, segregated markets, they buy competitively in one great national wholesale market. Certainly, if competition exists, and plays any part in the realization and survival of superior managerial ability, that ability should find chance for functioning and for reward in advantageous buying of stock. Secrist's

2. Secrist, Competition in the Retail Distribution of Clothing, pp. 13, 14, 20, 21.

study, however, does not include the cost of goods sold,[3] so it throws no light on this interesting question. In the absence of information as to the effectiveness of competition between clothing manufacturers and jobbers, and as to the extent to which conventions and tacit agreements as to price and credit policies may have developed in the industry, no definite opinion as to the scope that superior managing ability has, to strike profitable buying bargains, can be formed. That price competition has to some extent been eliminated from the wholesale, as well as from the retail, end of the business is suggested by the fact that, in small towns especially, a dealer commonly carries but one brand of clothing, which he continues to carry year after year. It would be interesting to know to what extent this practice makes the retailer essentially a sales-agent for the manufacturer, and how far the manufacturer exerts pressure or influence over the retailer, as to sales policies, by way of credits and other accommodation.

The overhead chargeable to equipment is not large in a retail clothing store. Taking it at whatever importance it may have, however, we may assume that manufacturers of equipment sell in a nation-wide market. Whether there is much chance for superior management to reap gains of bargaining in the purchase of equipment may be doubted, when one reflects that the same patented devices for the hanging and handling of clothing — an immense advance over the old days when the salesman by main strength fished a rumpled garment out of a weighty pile, with the remark, "All it needs is pressing" — are to be seen in stores of all sizes and types of trade, from Boston to San Francisco. In floor space and location (rental costs), competition is of course limited to the given town or city. The same is in

3. Secrist, op. cit., p. 10, note.

the main true of loans and credits (where not advanced by jobber or manufacturer). The local dealer will go to his local banker. On the whole, then, it would seem that competition in buying must be subject to many limitations incompatible with the classic idea — or at least the classic *ideal* — of free competition.

Turning from retail clothing to the great staple commodities which were subjected to war-time price-fixation, and which are held to reveal the persistence of non-uniform costs and rent of managing ability, it will be evident at once that they are, generally speaking, sold in nation-wide or even world-wide markets. Consequently the criticism that the price data for them, which Taussig, Wright, and Simpson analyze, do not pertain to the same market, will not hold so surely as it will for Secrist's handling of the data for clothing. The fact that a commodity is sold in a wide market, however, does not necessarily mean that the price is competitive, or that the observed differences of costs, and consequently of profits, are the results of varying managerial ability. Unless one has a somewhat elastic concept of the meaning of competition, he will find some difficulty in concluding, from governmental price data, — especially those of the Federal Trade Commission, — that the market for all these staples is wholly or even primarily competitive.

In the Canned Salmon Report, The Federal Trade Commission's "inquiry indicates that a large degree of control over price is exercised by a few dominant interests." And further it is stated that "it is a general practice in this industry for one or two concerns to announce the opening prices, which are followed by the canners producing a great bulk of the pack." [4] The fact that four companies produced, in 1918, 43 per cent, and

4. Report on Canned Salmon, 1919, p. 10.

nine companies 66 per cent, of the copper turned out by "companies other than porphyries and lake" does not prove that competition is not present and "free," but it is enough, in itself, to stimulate legitimate doubt.[5] The question as to the reality of competition in the great staple industries cannot be pursued here. No one will question that most agricultural produce is sold competitively. But the Government's long fight against combinations, the existence of huge integrated concerns like the Steel Corporation, the great packing houses, the Standard Oil Company, and the host of combinations in other fields which have succeeded in maintaining a legal existence or in operating in spite of adverse court decisions, are certainly not lightly to be passed over by those who still cling to the classic idea that free competition is an actuality real enough to afford firm ground for a doctrine of competitive costs and rent of superior ability.

Let it be assumed, for the sake of argument, that there is no combination in restraint of trade — that there are no price agreements, direct or indirect. Then a great staple, say iron and steel products, sugar, newsprint paper, copper, may have a national market in which the wholesale price is determined by competition between the producers. This is what Marshall would call its general market. For such commodities as iron and steel, sugar, copper, paper, and even canned goods (especially canned salmon), it might not be necessary to think of any other kind of market. For such staples it would be permissible to plot in one curve the costs of all firms, wherever located. But there are other commodities, among them two mentioned by Taussig (bituminous coal and Douglas fir lumber), which have distinctly special, as well as general or national, markets. To plot

5. Federal Trade Commission, Cost Reports: Copper, 1919, p. 18.

the costs of all producers of any of these commodities in a single curve, regardless of the location of the plants, is a risky procedure. Connellsville district soft coal may compete with West Virginia and Ohio coals in Ohio, but it probably does not have to do so in the Connellsville district itself; and it may be doubted whether it competes seriously with Illinois bituminous in Moline or St. Louis. Douglas fir competes with southern pine in northern markets, but not in southern. California and Florida citrous fruits compete in the general, national market, but you will have difficulty in buying a California grapefruit in Florida or a Florida orange in Los Angeles. Similarly Texas spinach and Virginia spinach compete in northern markets, but not in each other's home markets. The list could be extended indefinitely, until we came to bulky things like brick and building stone, which, in spite of wide differences in cost of production, can have but relatively local markets. The more important the local market is, compared to the general market, the greater is the error involved in a cost curve including all the firms of the country. To conclude, for instance, from the fact — if it is a fact — that it costs less to make brick in Columbus, Ohio, than it does in Elgin, Texas, that brick-making entrepreneural talent is mediocre in Texas and high in Ohio, would be risky.

Moreover, even if we make the rough assumption that competition tends to equalize wholesale prices (transportation charges aside) nationally, we have no surety that retail prices will show such a tendency. Given a long enough "run," and remembering the willingness of the supposedly typical American to answer the call of commercial opportunity, from whatever part of the country it may come, we may grant, theoretically, that retail prices and retail profits will be substantially

equalized as between different regions. Actually, however, the mobility of capital, labor, and entrepreneural talent is hardly sufficient to bring this about, either within the five-year period of Secrist's investigation, or before dynamic factors or conjuncture changes of various origins and hues have again disturbed any equilibrium that may have been in the making. Any study of competitive retail selling costs must therefore confine itself to data taken from the same local market.

Even where we have reliable cost curves for the same market, however, and find quasi-permanent differences between different firms or types of firms, it will not do to entertain other than a skeptical attitude toward the idea that these differences are the expression of different degrees of entrepreneural talent under free competition.

There remains the possibility, indeed the probability, that competition does not compete in anything like the manner conceived, as an ideal to be striven for, rather than an actuality, to be sure, by the classical writers. The logical outcome of competition is uniform costs and the elimination of all differential profit. Either that or monopolistic combination. If neither of these results ensues, the inference may be entertained that there are conditions present which give to the term competition various vague and undefined connotations, varying with the writer using the term. There are ample indications that the concept, if it has any definite meaning at all, has swung far out of the channel of significance attached to it by the classical writers.

Be that as it may, there are definite causes why low costs and, more particularly, satisfactory profits may not be due to the superior capacity to which Walker attributed them.

In the first place, as is well known (but not empha-

sized in the texts), there are many consciously designed devices to avoid or to limit competition — brands, trademarks, sales on style and quality basis, trade agitation against price-cutting, selling at prices fixed by the manufacturer, agreements between dealers as to price and sales policies, open price associations, and so on.[6]

In the second place, is the important fact, too frequently overlooked, that established concerns, long on the ground, have a tremendous advantage, the advantage of priority. They are, for one thing, usually in possession of the best locations. In rapidly growing cities in which the center of retail shopping is drifting, this is not a permanent advantage. A firm's prosperity may hinge on whether its directors have the nerve to pull up and move to a new location "far up town." Conjunctures demanding decision on such a matter will come to any firm in the course of time. For decades, however, once well located, a firm may have an advantage of which others cannot rob it. Any new concern must be prepared to outbid the old ones for a desirable high-rent location. Considering the restricted area of the popular shopping district, the established firm has a decided advantage.

Furthermore, the established concern has long since built up its custom, its good will. It can rely upon the habits of its customers, whereas the new concern has to rely upon the stream of folk passing its show windows, and upon aggressive and expensive advertising. The advertising of the established firm can be of a more rou-

6. See S. Bell, "Fixed Costs and Market Price," Quarterly Journal of Economics, May 1918, vol. xxxii, pp. 511–513; M. N. Nelson, "The Effect of Open Price Association Activities on Competition and Prices," American Economic Review, June 1923, vol. xiii, pp. 258–275; M. N. Nelson, Open Price Associations, University of Illinois Studies in the Social Sciences, June 1922, vol. x, no. 2.

tine and less expensive nature. It can ordinarily secure loans with less careful scrutiny on the part of lenders. Its financial stability is recognized, its credit with manufacturers and jobbers assured.

In the third place, the old, established firm is quite likely to have the advantage in point of size. Such advantage may be in part due to superior sagacity, but it is by no means always and everywhere so. Like the advantage of location and good will, advantage as to size may be due to priority. The founder of the firm came to the town early, the town grew, and the firm grew with it, almost automatically. Not all the first-comers survive, of course. Business ability plays its part. But so do luck, and population increase, and unforeseen conjunctures in the economic development of the town and the region. "Unearned increment" is by no means confined to land values.

Hence, to say, as Secrist does of the retail clothing trade, that "the field may be freely entered and almost as readily quit," is to use the terms "freely" and "readily" in a very much qualified sense. Could one "freely," that is, without certainty of extremely heavy initial expense and some probability of failure, enter the retail clothing business on State Street or Michigan Avenue, in competition with Marshall Field and Co., Capper and Capper, The Hub, and other firmly established department stores and specialized shops? And what is the inducement to a newcomer in a small town already so well supplied with clothing stores that none is doing a land-office business?

Now, a word as to permanent and temporary advantages between firms. Differences in the extractive industries are generally conceded to be "permanent," while those in manufacturing are regarded as "temporary." On this distinction Taussig builds his theory

of costs in relation to value.[7] In his comment on Secrist's monograph, however, he seems to be modifying his view. "There is a cause at work which keeps . . . the low-cost firms steadily in the low-cost region. Presumably the cause at work is a difference in managing ability. The general result, then, is to point to the existence — in a certain range of business operations — of a representative firm and a normal price-determining cost; and also of a set of firms below the normal and with a differential gain analogous to economic rent." [8] Permanent differences thus appear in manufacturing and merchandizing as well as in the extractive industries. If this be true, and if the resultant "gain analogous to economic rent" be not due to overlooked advantages of location, priority, etc., abiding differential profits may be regarded as a rent of ability. But if so, what becomes of the traditional price-leveling function of competition? In plain terms, if competition competes, why do not these low-cost firms drive the "representative" and all other firms out of business? There are various possible answers, none of them satisfactory, which we will not take up here. So far as the data under discussion in this article are concerned, the obvious answer is that the firms considered are in great measure serving different markets, and hence are not competing firms.

It should be added, in passing, that the separation of advantages in manufacturing costs from those in the purchasing of raw material is by no means a simple matter. Even a cursory reading of the Federal Trade Commission's brief report on copper should convince one of that. And even in the data as to the cost of producing

7. Principles of Economics, vol. i, third edition, chaps. 12–14.
8. "A Contribution to the Study of Cost Curves," Quarterly Journal of Economics, November 1923, p. 176.

sugar, in which the raw material and manufacturing costs, as noted above, are segregated, it is by no means clear that some of the differences in manufacturing costs may not be due to differences in the raw material, e. g., sugar content of the beets, and in cost of handling it from producer to buyer.

Our conclusions may be summarized as follows. (1) An inductive study of costs in relation to the effects of competition must be confined to the costs of firms dealing in the same commodity in the same market. To lump together firms from all over the country, or even those catering to differing classes of trade in the same city, involves, in the case of retail selling, the assumption of competition where it does not exist. Even in the case of the costs and wholesale prices of the great staples which enjoy a national, or general, market, there are circumstances (combination and trade agreements left out of the discussion) which may introduce non-competitive elements, as between local or home markets, both in costs and in selling prices. (2) Even where firms serving the same market show apparently permanent differences of costs, it will not do to infer that these differences are necessarily due to differences in managerial ability.[9] Devices for limiting and avoiding competition, the advantages of priority, established trade connections, and size, as well as the possibility that not all the "natural" advantages have been allowed for, must be taken into account. These facts render it impossible surely to attribute to superior entrepreneural ability, under competition, the differential profits of the intra-marginal or representative firms.

There can be little question that the future of economic theory lies in a judicious combination of hypoth-

9. Except in so far as managerial ability functions in avoiding competition.

esis, abstract analysis, and inductive research. Books like Cassel's *Theory of Social Economy*, with their difficult abstractions and their rigid logic, will continue to be written. They will, however, as is the case with Cassel, show an increasing tendency to realism, for all their abstraction. Underneath the structure of logic will lie a larger foundation of factual observation, however inadequate and unsystematic it may be. But the present tendency, best exemplified, perhaps, in the work of Mitchell and his associates, to put systematic inductive research first and logical analysis second, will gain ground, until the older theoretical structures will compare with the new somewhat as the old philosophic, introspective psychology now compares with scientific behaviorism. In short, there is a probability in economics, tho scarcely yet in sociology, of a scientific method, with its feet on the ground, in place of the conflicting philosophies and systems which now go by the name of theory.

But this change of base will not be unattended by dangers, and putting content into "empty economic boxes" will not be the work of a year or a decade. Leaving at one side the dependence of economic theory upon the development of fuller psychological knowledge, theorists, to the extent that they base their analysis upon inductive research into the facts of the business system, can proceed no faster than does that research. The problems with which we have to deal, for instance, that of cost in relation to prices and profits, involve not only such a range of data but such necessity of technical definition and discrimination in matters where definition is extremely difficult, and perhaps never entirely satisfactory to all concerned, that the scientific spirit will counsel some caution, both in drawing generalizations and in placing implicit confidence in the data supplied.

More specifically, it is quite evident that theory, from now on, will have to make more and more use of the inductive researches of bureaus of business research. Supposing that the personnel and the financial backing of whatever bureaus may be established will be such as to raise no question as to the disinterestedness and objectivity of their work — still, their results will have to be used with caution. The theorist will have to be something of an accountant and something of a statistician, at least enough to understand the methods of factual research and of analysis used by the bureaus. He will have need of some skepticism as to the fulness and accuracy of data, unless it is established that the data have been gathered by expert representatives of the bureau, in person. He will have to be sure that the accounting methods upon which the data are based are uniform. Critical analysis will constantly be called for, to determine whether the data are so collected and so analyzed as to be proper data for the specific problem which the theorist has in hand. In a study of costs, for instance, it will be primarily necessary to fix in mind what the accountants and statisticians who supply the data have, or have not, included under costs.

With regard to the specific problem dealt with in this paper, the fact-finding agencies, if they are to afford us data which we can properly use, must not only gather cost data at first hand and on a uniform system of accounts, but they must arrange these data according to market limitations. In the case of the costs of retail merchandizing, only the firms of the same town, or at most the same metropolitan district, should be compared. If there are enough firms, within such a market area, analysis can then proceed to costs as correlated with size, age, etc. In large cities, the firms should be segregated into groups on the basis of type of custom, and

the non-competitive element between these types recognized, and, if possible, measured. Finally, a detailed genetic study should be made of the life-history of specific firms, both successful and unsuccessful. The fortunes of the firm should be traced in correlation with the business, industrial, and social history of the town and the country.[1] Given a sufficient number of such commercial life-histories, no other method would seem to promise as much real light on the vexing problem of competition, monopoly elements, costs, prices, and profits. Analogy is always dangerous, but it may here be suggested that it is by just such specific comparative genetic researches that modern biology is making its advances. To do as Secrist does, and lump all firms together, is a method comparable, in its erroneousness, to that of the biometricians in lumping together in one correlation table a number of pure lines.

In the case of staple commodities sold over wide geographical areas from central production points, it would be desirable to have statistical data of sales, together with prices, made by each firm in the area normally supplied by other firms. That is, the total sales of each firm should be divided between those which it makes "at home" and those made elsewhere. While such statistics would be extremely complicated and costly to collect, they would afford a statistical basis for estimating the amount of competition in a given territorial market and then in all these markets collectively, between producing companies wherever located.

A series of intensive studies of the kind suggested would without much doubt show marked non-uniformity of costs of merchandizing between the different firms supplying the same local market. When we have com-

1. One very successful manufacturing concern in Massachusetts is now making a critical study of its own development.

plete detailed data for a given market, we shall then be in position to analyze the probable influence of size, age, situation, and conjuncture influences, and thereby separate the natural, social, and fortuitous advantages (in a word the conjuncture-advantages) from those derived from superior entrepreneural ability. Then, and not till then, shall we have a dependable estimate of the relative extent and importance of superior business ability and of the "rent of ability."

If, having set aside the differentials due to superior location, and other advantages which have accrued to a firm without dependence upon the quality of its management, and if, regarding these differentials as in the nature of intramarginal situation rents and *Konjuncturgewinne*, we find other differentials which can be attributed only to superior managerial ability, we are then face to face with the paradox of competition: why does not competition, in some such way as that postulated by the elder Clark, eliminate these latter differentials and bring all costs (aside from situation advantages) to a uniform level? Ideally, if the phrase "free competition" is to be taken seriously, this is what should happen.

If it does not happen, and if we find, in the same market, few lines of production or business which reveal even approximate uniformity of cost, that will be evidence that even in what we call competitive price determination there is a monopoly element. But this aspect of the problem is not matter for this paper.

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THE AUSTRALIAN INCOME TAX

SUMMARY

Growing Importance of Tax Problems. The Australian Commission. — State and Federal Taxes, 72. — The Income Tax, 74. — The Averaging System, 76. — Exemptions and Allowances, 80. — Taxation at the Source, 83. — Differentiation, 88. — Graduation, 89. — Miscellaneous Topics, 91.

I. Growing Importance of Tax Problems

War-time financial methods left a heavy post-war burden of debt in Australia, as in other belligerent countries, and the incidence of taxation became, for the first time in the history of the country, an important political question. In the halcyon days before the war, when taxation was but a small percentage of the national income, injustices and inconveniences did not attract widespread attention. When, however, the taxation became burdensome, amounting to roughly 20 per cent of recorded production [1] in 1920 compared with 10 per cent in 1911, the economist's conception of marginal utility came into prominence. The increased sacrifice brought to light many inconsistencies in the tax system and gave rise to some doubts concerning its general equity. The overlapping of State and Federal authorities added to the general confusion and there were insistent demands for tax revision and reform. In these circumstances the Commonwealth Government in 1920 took the important step of setting up a royal commission to review the whole problem. In particular the Commission was

1. "Recorded production" must not be confused with "national income." The former should be increased by at least 50 per cent, to obtain an estimate of the latter.

to inquire into and report upon the incidence of Commonwealth taxation and into and upon any amendments which are necessary or desirable with a view to placing the system of taxation upon a sound and equitable basis, having regard generally to the public interest and particularly to

1. The equitable distribution of the burdens of taxation.
2. The harmonisation of Commonwealth and State taxation.
3. The giving to primary producers of special consideration as regards the assessment of income tax, particularly in relation to losses resulting from adverse weather conditions.
4. The simplification of the duties of taxpayers in relation to returns and in relation to objections and appeals.

Three of the states — Queensland, Tasmania, and Western Australia — concurred in the suggestion of the Prime Minister that the Commission should be given powers of a royal commission with respect to State taxation.

The Commission took its task seriously, prepared an elaborate questionnaire upon taxation problems, visited all the states in turn, and examined 191 witnesses. It thus collected an array of data and opinions upon taxation such as had never before been at the command of the public powers. Upon these, five lengthy reports were prepared, the first appearing in November 1921 and the last in February 1923. These reports make a searching review of the problems of taxation in Australia and contain many valuable suggestions for reform. Unfortunately the evidence has not been published, tho it attracted much attention in the public press during the sittings of the Commission. It is doubtless on record and should prove of incalculable value to the future research student of Australian finance. But the published reports are comprehensive and, with one important exception,[2] no problem has escaped attention. I have

2. See below, p. 81. No reference was made to the incidence of customs and excise duties and it may be added, the Commission gave no consideration to the vexed question of the capital levy, tho it had evidence on the matter.

surveyed the findings of the Commission upon the question of "harmonisation of Commonwealth and State taxation" in a recent issue of the *Economic Journal*.[3] It is proposed here to examine the main conclusions upon the income tax.

II. State and Federal Taxes

Before federation, in 1900, the six colonies[4] had exclusive fiscal control in their own territories, and levied customs and excise duties as well as land, income, and probate taxes, according to their needs and policy. The Federal Constitution gave the Commonwealth Parliament unlimited powers with regard to taxation, provided there was no discrimination among the states. At first the Federal Government confined its fiscal powers to customs and excise duties, of which only one fourth was required for federal purposes, the remainder being handed over to the states. This arrangement was altered in 1911, when the states received a fixed per capita contribution of 25 shillings; but the Commonwealth Government had then entered the field of direct taxation.[5] In 1910 the Labour Party, then in office, introduced a land tax for both fiscal and social purposes. In 1914, after the outbreak of war, succession duties were levied and in 1915 a federal income tax imposed. Later, a war-time profits tax and an entertainments tax were added.

During and after the war the states continued to borrow heavily for internal development, and their debt

3. September 1924.

4. Now the States of the Federation. In this article "State" is used in this connection.

5. For the purposes of this article excise and customs duties will, of course, be regarded as indirect taxes, and all other taxes as direct, except where specifically mentioned. This is the popular, tho erroneous, classification in Australia; and for convenience it may be adopted for present purposes.

charges were steadily increasing. With the ever-present tendency to expand the sphere of government and the rapidly rising price-level, it is not surprising that the fiscal needs of the states became pressing. Both State and Federal authorities were therefore imposing additional burdens upon the taxpayer and the problem of double taxation came up in a very pronounced form. Moreover, the varying necessities of the states and their political traditions and outlook added great complexity to the tax system and brought into prominence the need for greater uniformity. This aspect of the problem is not strictly relevant to the present discussion, but it should be mentioned as perhaps the most important cause of dissatisfaction. It emphasized the burden of taxation as a whole and the growing importance of the income tax in particular.

TABLE I.—YIELD PER HEAD OF TAXES IN THE STATES AND COMMONWEALTH, 1922–23

State	Income tax	Land tax	Probate and Succession duties	Total Taxation
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
N. S. W.	1 18 8	.. .. ..	10 10	3 11 10
Vic.	19 1	4 11	8 10	2 11 3
Q'land	2 14 6	10 7	6 6	4 4 6
S. A.	1 15 2	7 9	8 0	3 10 10
W. A.	1 13 9	4 8	2 8	2 17 6
Tas.	1 9 8	8 11	5 2	3 6 6*
C'wealth	2 5 10	7 2	4 2	8 17 1
General Average	4 0 2	11 5	12 10	12 3 8

* Tasmania taxes a licensed lottery, most of the investments in which come from outside of Tasmania. It is computed that 18 shillings per head is derived in this way, and hence the Tasmanian taxation per head should be £2 8 6. This is the lowest of the states, but increases in taxation in Tasmania estimated at 13*s.* 4*d.* per head have been imposed recently.

Apart from customs and excise, the income tax is by far the most important tax levied by both State and

Federal authority. Direct taxation for the year ending June 30, 1923 amounted to £35,753,000, of which the income tax was responsible for £22,572,000 or 63 per cent. This tax therefore occupied a great deal of the attention of the Commission. Its importance is shown in Table I, giving the yield per head of the important taxes levied by State and Federal authority for the year 1922–23.

III. The Income Tax

Problems of income tax are discussed in three of the Commission's reports. In the first the urgent question of granting relief to primary producers brought up the principle of averaging. The second report is devoted largely to the major questions of taxation at source, differentiation, graduation, and double income taxation. In the third the nature and amount of deductions from income tax constitute the principal topic. The Commission had before it the British Income Tax Report of 1920, which it frequently cites; and there is abundant reference to expert opinion, notably the Newmarch lectures of Sir Josiah Stamp. The most important topics may be taken in the following order: (1) the averaging system, (2) the general exemption and allowances for children, (3) taxation at the source, (4) differentiation, (5) graduation, (6) miscellaneous topics of minor importance.

Before proceeding with these, a brief statement of the nature and scope of income tax may be given. As already mentioned the six states have income taxes and the Commonwealth adopted the measure as a necessary war measure. But the Commonwealth tax is superior in design and more burdensome than the state acts.[6] It

6. Rates in Tasmania are now higher on middle range incomes.

is levied on all incomes earned in Australia, wherever the recipient is domiciled, and gives adequate recognition to the sound theory of income taxation. In this respect it has some advantages over the older income taxes, such as the British, in that the authorities had practically a virgin field to operate upon as well as a solid background of accepted theory from which to draw. The original act is thus an advanced expression of income-tax theory, and attempts to apply the scientific principles of graduation and differentiation with the minimum of friction and expense. Very extensive powers were granted to the Federal Commissioner of Taxes, who, with his six deputies, located in the six states, controls the administration. It is generally admitted that the administration has been as enlightened as the Act itself, tho the Department's methods may cause some annoyance and there is the usual stringent adherence to regulations so common in Government departments. The following may be given as the more important provisions in operation in 1920, when the Commission was appointed:

(1) The exemptions for single and married persons gradually decrease and disappear for incomes of about £600.

(2) Allowances for children operate throughout.

(3) Graduation is secured by an elaborate formula.

(4) There is marked differentiation between the rates on incomes from property and incomes from personal exertion.

(5) The assessed income is the one earned in the previous year in Australia. Thus taxes are paid in 1923–24 on the income earned in 1922–23. Payments commence usually in January.

(6) The principle of taxation at the source is confined to the tax upon the undistributed profits of companies.

(7) Liberal deductions for expenses, depreciation, insurance premiums, gifts, superannuation payments, rates and taxes, etc., are allowed.

(8) Tax is paid in one annual amount and the Department may levy a fine of 10 per cent of the tax upon assessments outstanding after one month from their dispatch to taxpayers.

The State income taxes differ in many important respects from the Federal tax and from one another. These will be indicated in the text where relevant, and the above provisions fully outlined.

IV. The Averaging System for Assessment

On this question the Commission departs somewhat from accepted opinion. The general question of averaging arose through the appeal of the primary producers for special consideration. Since they are responsible directly for about 70 per cent of the total production of the country, their case was of great importance. Much primary production is carried on under what the Commission designated "vicissitudes of fortune," in contrast with the more regular nature of manufacturing production. This is true everywhere, but the climatic conditions of Australia and the great dependence of primary production upon the world market add weight to the claims for relief on this ground. An actual example taken from the records of the Federal Income Tax Department will illustrate the point.[7] The following statement gives the experience of a grazier producing on a large scale.

	Profit	Loss
1st year	£24,015	
2d year	28,805	
3d year		£34,646
4th year		67,255
5th year	4,163	
6th year	55,531	
7th year	45,835	
Net Profits	£56,448	

The tax actually paid by this grazier over this period was £60,161, whereas the tax paid on earnings of £56,448 in equal annual receipts of £8,064 would be £13,299. The case serves as a very effective demonstration of the

7. Quoted by the Commission, p. 5.

injustice of an income tax which makes no allowance for losses. Admittedly it was extreme, but the Commission selected at random fifty cases from the records and found that the irregularity of receipts for primary producers increased the tax burden by 50 per cent over that imposed upon regular incomes of equivalent amounts. Droughts, fires, and floods render the prosperity of many primary producers precarious, and profits frequently give place to losses.

While there is general agreement upon the hardship imposed upon recipients of irregular incomes, the provision of relief gives rise to serious controversy. On this point the Commission was divided, a majority of four favoring a system of averaging and a minority of three supporting the proposal of the British Commissioners for carrying forward losses. The calm judicial reasonings of a Royal Commission's report is here broken by heated argument, and the majority take the rather unusual course of scolding the dissentient minority for alleged misrepresentation of the majority proposals, and of exposing, in a rejoinder, what they consider the fallacious arguments and conclusions of the minority.

In the process of an ingenious and elaborate argument the majority seek to emphasize (1) the inconvenience of using the year as the unit of time for the basis of assessment, and (2) the difference between taxable capacity (rate of tax) and taxable income. On the first point they quote with favor the authority of Sir Josiah Stamp that "the high rate of tax is bringing the time question in regard to ability to pay into prominence"; and further, that "the average more properly indicates the economic ability of well-to-do people." [8] But Stamp may be quoted with equal emphasis against the averaging principle, and his general conclusions appear to be in this direction. Moreover, the British Com-

8. The Fundamental Principles of Taxation, pp. 27 ff.

missioners found great discontent with the averaging system. "Hardly anyone," they record, "had a good word to say for the average," [9] and they very definitely affirm the desirability of the single year, advocating "the year of assessment basis as the ideal basis." But the Australian Commissioners devised a scheme to meet the objections to the averaging system while retaining its advantages. "Pruned and cleaned of parasitic growths, stripped of the confusing excrescences which are not of the essence of the system, averaging is a healthy and beneficent plant whose fruit is wholesome" (Sec. 60). Fortunately the argument, tho ingenious, is not as mixed as the metaphor. The method of carrying forward losses is rejected because it does not afford adequate relief and would maintain an unfair discrimination against recipients of irregular incomes. The majority return to the averaging system to provide the rate of the tax (that is, taxable capacity) while retaining the previous year's income as the basis of assessment. It is shown that the tax paid in twelve representative cases would be only 6.7 per cent greater under this arrangement than the tax on a steady income, while the difference would be 37.1 per cent under the method of carrying forward losses.

The minority, on the other hand, favor the latter method on the grounds that (1) it affords sufficient relief; (2) the averaging system is complicated; (3) the comparison with a tax on a regular income is too rigid; and (4) fixing the rate on the averaging system would in effect alter the principle of graduation. There is great substance in the last two objections. It is apparent that the averaging method would bring relief during a period of inflation, but it may have the opposite result if prices and incomes are falling. The cases quoted by the majority occurred during the war and post-war inflation,

9. The Fundamental Principles of Taxation, p. 105.

but their proposals would increase the rate of the tax if incomes were falling steadily. It is obvious that the scheme would discriminate in favor of primary producers and against the salaried classes in times of rising prices, and conversely when prices fall. This will be recognized as an added impost upon recipients of fixed salaries to whom rising prices are an injustice, tho affording them relief when the scales are in their favor. Hence the interference with the principle of graduation. But the standard of comparison is surely too rigid. The majority Commissioners propose an averaging period of five years. No reason is given for this; and if comparisons are to be made with fixed incomes, why not assess a man's taxable capacity upon his average annual earnings from the time he first received an income?

Taxable capacity varies with the amount of the income from year to year, and the averaging system proposed will result in applying high rates to low incomes and low rates to high incomes. Despite these considerations, the majority have won their point, and the Federal income tax has been amended to provide for the application of their proposals to all incomes. It will be interesting to observe the operation of this novel definition of taxable capacity, but one may hazard a guess that a producer who pays a tax of £40 on an income of £500 will want to know why the salaried man with a similar income pays only £25. Taxpayers habitually have grievances, and the callous official may ignore the protest; but he cannot overcome the more serious objections against the existing law. It should be added that the averaging system has been applied to the Federal income tax only; the Commission made no specific recommendations regarding state laws.[1]

1. The averaging method was applied to income from primary production only in 1921. A further amendment in 1922 extended the principle to all taxpayers and to companies, but by the Act of 1923 companies were excluded.

V. The General Exemption and Allowance for Children

In 1921, when the Commission made its first report, the exemption in the Federal tax was fixed at £100 for single and £156 for married persons, with an additional allowance of £26 for each dependent child under sixteen years of age. The exemptions, however, diminished at the rate of £1 for every £5 by which income exceeded £100 for single persons, and £1 for every £3 by which income exceeded £156 for married persons. There would thus be no exemption for incomes of £600 and over in the former case, and of £624 and over in the latter, except where there were dependent children. A special provision of the act fixed the minimum tax on any taxable income at £1. The state exemptions and allowances varied greatly in both nature and amount. New South Wales was the most liberal, with a general exemption of £250 and an allowance of £36 for each child under eighteen years of age. At the other end of the scale were Western Australia, with an exemption as low as £100, and Tasmania, with a children's allowance of 6 shillings deducted from the tax on taxable incomes of less than £350.

These provisions were for the most part of long standing, and it was justly argued by witnesses that the increased cost of living had altered the original intention of the legislature. But witnesses were by no means unanimous upon the principles that should be adopted in determining the exemption or the amount at which it should be fixed. Some favored a general exemption running through all incomes. The Commission admitted the theoretical and administrative advantages of such an arrangement, but considered the loss of revenue entailed and the consequent readjustment of rates as

serious objections. This is rather inconsistent with the conclusion upon the averaging system noted above; and in any case, the loss to the revenue by various proposals for raising the general exemption and making it apply equally throughout the whole scale of incomes was shown to be relatively small. Thus a non-diminishing exemption of £200 on all incomes would involve a sacrifice of £1,400,000 to the revenue, or 10 per cent of the total income tax for 1921.

The great dependence upon customs and excise taxation makes such a proposal all the more necessary. For the Commonwealth Government alone this formed 65 per cent for the year 1922–23; if the state taxation is included, customs and excise are 47 per cent of the total taxation. This has the effect of increasing the burden on the lower incomes, as Sir Herbert Samuel has shown with regard to the United Kingdom.[2] On an income of £100, indirect taxation amounted to £13 16, or 13.8 per cent; and taking the tax system of the United Kingdom as a whole, rates are degressive on incomes from £100 to £500. The Australian Commission did not examine this aspect of the problem; indeed, the whole question of customs duties was ignored by the Commission. This is the gravest defect in its work, and it is unfortunate that the opportunity was not availed of for making an authoritative examination of the incidence of protective duties. Not that this would have greatly disturbed the widespread faith in protection at the moment, but it would have placed on record many inconsistencies in the protectionist philosophy while providing the Commission with a necessary background for the treatment of direct taxation.

Whether this would have influenced the Commission in its recommendations regarding exemptions is doubt-

2. The Journal of the Royal Statistical Society, March 1919.

ful, but it would have led to a more fundamental answer to the question put by the Commission: "When should a citizen first begin to contribute through an income tax towards the financial needs of the State?" The answer given is: "So soon as his income is more than is sufficient to maintain him in health and economic efficiency. The bare subsistence level discloses no taxable capacity; the level just above that of economic efficiency indicates the point at which the State may justly levy some direct contribution, however small. We are not convinced of the necessity of making any material changes in the general exemption." The Commission accordingly recommended slight changes, raising the exemption for single persons from £100 to £104, but fixing the rate of diminution at £1 for every £3 by which the income is in excess of £104, thus bringing it into line with the exemption for married persons. Further, the provision for a minimum tax of £1 was to be rescinded.

These deductions are in striking contrast with the findings of the Royal Commission on the Basic Wage in 1920. It was computed that £5 16 6 was the weekly wage necessary for a man with a wife and three children. On this principle the exemption for such a taxpayer should be not less than £300, whereas the above recommendations fix it at £234. There were two reservations to the recommendations, both urging that the exemption should apply to all incomes, but differing upon the nature of the exemptions and allowances. One commissioner proposed that the deductions (including allowances with regard to rates, insurance, etc.) should be "specifically expressed in terms of assessable income but be applied in the equivalent terms of tax assessment." This proposal would secure "equality of treatment to all taxpayers in respect of such allowances." It is true that the deduction from tax would operate uniformly

throughout, but the proposal ignores the principle of diminishing utility of income whereby decreasing deductions from tax with increasing incomes would be a true measure of equality of sacrifice. Moreover, the taxable income should be recognized as a surplus above the needs of the taxpayer for which there should be an allowance for all incomes. Rates should then be applied to the taxable surplus. Indirect taxation is already a heavy burden upon incomes below this surplus, as is recognized by the second dissentient commissioner, who proposed fixed exemptions on all incomes of £156 for single and £260 for married persons, with £36 for each child. These proposals are in keeping with those of the British Commissioners and generally with accepted opinions, and their adoption would improve the tax.

VI. Taxation at the Source

The Commonwealth income tax is mainly a graduated tax on individual incomes. Consequently the distributed profits of companies are taxed in the hands of shareholders while undistributed profits are taxed through companies. In the states, company profits are taxed prior to and irrespective of their distribution. Witnesses gave much attention to this arrangement, and this raised the question of taxation at the source. In its wider meaning as applied in Great Britain, the principle was not seriously entertained; but the growing importance of company organization gave emphasis to the question in its narrower applications. Four possible courses of action with regard to company taxation were considered.

(1) Taxation of company profits without adjustments and exclusion of dividends from shareholders' returns. — This method is in force in four states (New South

Wales, Victoria, Queensland, and Tasmania), but it clearly alters the incidence of the income tax by discriminating against small incomes. Interesting information upon company profits for the year ending June 30, 1920 was given to show the effects of this method. It may be repeated here.

Total company profits	£42,216,256
Undistributed income taxed in hands of companies	22,830,640
Distributed income taxed in hands of shareholders	10,612,929
Dividends received by shareholders not paying income tax	8,772,687

The year 1919–20 was, of course, one of great prosperity and the undistributed income is doubtless a higher proportion of total profits than is usual. The number of shareholders not paying income tax was slightly over 200,000 and the flat rate on all profits would act harshly upon these. This rate was 2*s.* 8*d.* in the pound, and the number of shareholders paying income tax at a lower rate was 25,634, against whom also the flat rate would be an injustice. The remaining shareholders, 2,636, would benefit. Its advantages are simplicity, productivity, and equality, but its inequity was rightly considered as too serious an obstacle to its adoption.

(2) Taxation at source in its wider application to all incomes. — For the prevention of evasion this course would be useful, but it would be an expensive procedure for the smaller incomes, and the practice of "information at source" was thought to afford adequate protection for the revenue where the administration was thoro. The Federal Taxation Department has shown great zeal in detecting evasion, and with the accumulating mass of data regarding individual incomes and the complementary information arising through

land and probate taxes, the losses from this cause are being steadily reduced. Unfortunately the arrangements made in 1923, whereby the administration of Federal income tax is handed over to the states, may reduce efficiency in this respect.[3] But at the time no such development was projected and the Commission favored the system of "information at source" to the more rigorous course of "taxation at source," necessitating as it does such fundamental changes in procedure. In this conclusion they are in agreement with expert opinion.[4] It may be noted that some witnesses suggested the collection of taxes on wage-earners at the source. In this way it was hoped to secure revenue from wage-earners who escape through the nomadic nature of their work. The Commission found that both employers and employed were opposed to such a course and that the yield would be uncertain. They were therefore unfavorable to the proposal.

(3) Taxation of company profits with adjustment to individual shareholders. — Under this plan tax would be levied upon company profits before distribution and individuals would disclose in their income-tax returns the amount of dividends received from companies. Individuals would then be assessed on their total incomes, including company dividends, and rebates made to those who had been taxed too heavily, while further calls would be made upon taxpayers whose rate of tax was higher than the flat rate on companies. This method would be equitable, except for the temporary loss to some shareholders of the tax on dividends taken by the state; but the Commission thought it costly,

3. See article by the present writer in Economic Journal, September 1924.

4. Seligman, The Income Tax, p. 679.

while affording little additional protection to the revenue where a satisfactory system of "information at source" was in operation.[5]

(4) Existing practice, with more equitable adjustment in respect of dividends paid out of undistributed income. Under this arrangement dividends subsequently made available from undistributed income are treated as follows: (*a*) shareholders whose rate of tax is lower than company rate are entitled to a rebate at the rate of tax upon their incomes; (*b*) shareholders whose rate is higher than company rate must pay additional tax; and (*c*) the non-taxable shareholders receive no rebate. The department thus makes a just exaction under (*b*) but allows no rebate under (*c*) and an inadequate rebate under (*a*). There are three methods of meeting this unfair discrimination. First, the department might refund the whole of the tax direct to the shareholders and treat such refunds as part of their incomes for purposes of taxation. Secondly, it might refund the tax to the company after the payment of dividends, out of undistributed profits. Thirdly, undistributed profits might be taxed, not in the hands of the company, but as part of individual income as if they had been distributed. This method was thought unfair by the Commission, inasmuch as shareholders would pay tax on income they never received; but the first and second methods were regarded as fair, provided shareholders included all dividends in their returns and a simple form of return was made available for non-taxable shareholders. The

5. In the amending Act of 1923 this system was adopted. Companies pay tax on the whole of the profits at a flat rate of one shilling in the pound. If the shareholders' rate is above one shilling (i. e., if his taxable income is over £721), he is obliged to include his dividends in his income but is allowed a rebate of a shilling in the pound in respect of such dividends. Taxpayers in receipt of smaller incomes do not include dividends in their returns. It will be noted that this arrangement discriminates against the small taxpayer.

Commission finally recommended the maintenance of existing practice with adjustment to meet the unfair discrimination noted above. "We are of opinion that ' information at source ' will provide increasing protection for the revenue." Hence no step in the direction of taxation at source was thought desirable, and the necessary rebates under present arrangements would prove satisfactory.

In this, as in many other matters, there was a vigorous minority report, three of the seven Commissioners dissenting from the conclusion in the main report. These frequent differences of opinion reflect the unsettled state of public, and even expert, opinion upon problems of taxation in Australia. There is no scientific treatment of the subject yet available, and little agreement upon many details which are more or less settled principles in the theory of taxation. The minority favored taxation at source generally. "We are satisfied that the system of ' taxation at source ' possesses advantages which justify adoption." Their recommendations are, however, limited to companies which should be taxed at a uniform rate upon the whole of their disclosed profits. "Shareholders, whether taxpayers or not, would then be entitled to rebate or refund (as the case requires) of the sum paid in income tax by the company, proportionate to the interest of the shareholder in the whole net taxable profits of the company." Shareholders would be regarded for taxation purposes as having received a proportion of the company profits whether distributed or not, and such proportion would be included in taxable income. From the tax so determined there would be deducted "a sum having the same proportion to the tax already paid by the company as the shareholders' share in the profits bears to the total profits of the company." Thus, if X were the profits of

the company, Y the share that was received by the shareholder, and Z the amount paid in company taxation, the deduction would be $\frac{YZ}{X}$. This arrangement would doubtless safeguard the Department against evasion, but would be somewhat complicated in administration. Unless the change to the principle of "taxation at source" was contemplated, its advantages in the prevention of evasion would not appear sufficient to warrant its adoption. The simple expedient of requesting companies to supply information upon the distribution of their profits would provide ample protection in this respect.

VII. Differentiation

In both Federal and State income taxes (with the exception of that of Western Australia) the principle of differentiation is recognized, rates on "income from property" being in some cases double those on "income from personal exertion." These are the terms used in Australian legislation and they are considered by the Commission as "the most appropriate yet suggested." No consideration is given to the fundamental distinction mentioned by Stamp with regard to the respective obligations entailed in obtaining the two classes of income.[6] But the Commission is satisfied upon the general question, and approves the principle of differentiation upon incomes up to a certain point. Beyond this it is thought that the higher property incomes contain a large element of active earning, and the ability to pay approaches equality with the two classes of income in the higher groups. Of course, there is an element of differentiation in the existence of land taxes and estate duties, and a dissentient commissioner urges that this is sufficient.

6. Fundamental Principles of Taxation, p. 85.

The argument from Seligman that inheritance taxes may be regarded "as a convenient method of applying the principle of differentiation in taxation of income" does not affect the real basis of differential treatment of incomes.

The only serious controversy that now arises is over the method of applying the principle. The present practice in Australia is by differential rates, but the Commission favored a deduction of 15 per cent from "earned" income and the taxation of the remainder at the same rates as are applied to "unearned" incomes. Upon incomes of more than £1,500 the deduction is to be reduced at the rate of .005 per cent on each successive pound, disappearing at £4,500, after which differential treatment would cease. Under the existing law the differential rates are applied throughout, but with varying emphasis, being most marked on incomes from £2,000 to £5,000, when "unearned" rates vary from 80 to 68 per cent higher than "earned" rates. The plan proposed may be regarded as superior to the present arrangement of differences in the rates: it gives a definite concession in favor of the so-called "earned" incomes. The different circumstances under which the incomes are received makes such a concession just as necessary as is the exemption for wife and children. Taxable income is the surplus after allowing for these deductions, and the whole surplus may be taxed at uniform rates whatever be the nature of the income.

VIII. Graduation

Progression is accepted as an essential feature of taxation in Australia, but has been applied unevenly in the seven income taxes. In the Commonwealth income tax the rate rises from 3.00375 pence in the first taxable pound to 60 pence on the 7,600th pound. On each succeeding pound the tax is 60 pence. Super-tax brings the

highest rate to 102 pence, but the average rate never reaches the highest rate, and hence the tax is truly progressive. In some of the state taxes there are elements of regression, while in others the progression is carried out by a series of "jumps," as in the British income tax. This "step" system was frequently advocated by witnesses because of its simplicity, but the Commission thought it possible to secure the more equitable principle of regular progression along with simplicity.

One of the most serious objections to the Federal income tax has been the complex formula by which rates have been determined.[7] The formula for income from personal exertion is $R = \left(3+\frac{3}{800}I\right)$ pence, where R is the rate of tax in pence per pound and I the taxable income in pounds sterling.[8] There are three formulæ for incomes from property, according to the size of the income. Professor Edgeworth's comments cited below refer to these formulæ. It is, in effect, a grave offence to the maxim of certainty in taxation. To the average man so elaborate a formula is a source of bewilderment and serves only to increase his natural antipathy to the department. Moreover, as Professor Edgeworth has shown, "in spite of, or rather in consequence of, its mathematical elaboration, the Australian formula has hardly any advantage in respect of continuity over the formless British income tax." [9] The Commission was impressed with these arguments and made a very thoro examination of the nature and effects of different methods of graduation. They recommended a scale of rates con-

7. Commonwealth Year Book, No. 9, 1916, pp. 725–726.

8. From 1915 to 1921 rates were progressively raised by means of a super-tax. In 1922 there was a slight reduction of the super-tax, which now stands at 53.5 per cent of the original rates. The maximum rate is now 7*s.* 8*d.* in the pound. It is applicable to incomes of £7,600 and over from personal exertion, and £6,500 from property.

9. Economic Journal, vol. xxix, p. 152.

forming to a straight line on a graph, starting at 5 pence on the first taxable pound and increasing regularly, so that the *average* rate of tax on the income shall progress by .005*d.* for each additional pound of taxable income or one half-penny for every additional £100. The progression would cease at an income to be determined upon from time to time. While not conforming exactly to the law of diminishing utility of income (a graph of such is not a straight line), this system of graduation has great advantages over the existing method. Its simplicity can be increased by circulating with the forms of return an explanatory statement of rates, including the simple arithmetic rule for calculation of the average. It is readily adaptable to treasury needs and it affords a rough measure of real ability to pay. Its great defect is its rigidity, imposing a very heavy burden upon the higher incomes up to the point at which progression ceases. Usually there is a definite reduction in the rate of progression on higher incomes, but under this scheme the rate of progression is uniform up to a certain point, at which proportional rates are fixed. But the correct measure of ability to pay by a progressive income tax has long been recognized as difficult, if not impossible, to determine, while its application gives rise to serious inconvenience to the taxpayer. It is unfortunate that the Government has not given more serious attention to the adoption of this simple, tho less theoretically correct, system of graduation. The original formula, which is quite unintelligible to the mass of taxpayers, remains in force.

IX. Miscellaneous Topics

The Commission made a very thoro examination of the Income-Tax Act and the departmental regulations. Many matters of detail are of purely local concern but there are a number of wider interest.

(1) First, the Commission, with one dissentient, favored the taxation of incomes of Australian residents derived from abroad. This naturally adds to the burdens of double taxation, but it is in keeping with the drift of opinion upon the problem. The taxation of residents may be the most satisfactory solution ultimately, as was suggested by the experts appointed by the League of Nations to consider the problem, but is a dangerous principle for Australia to advocate. A debtor country would have much to lose by such a proposal, and Australia taxes all incomes earned in Australia, even the incomes of visiting cricketers.

(2) In the treatment of coöperative societies the Commissioners took the same view as the British Commission. The undistributed profits of a coöperative society are to be treated in the same way as those of a company, but a member of a recognized coöperative society trading only with its own members is not required to include in his assessable income any rebate received from the society. Witnesses urged that the undistributed profits of such societies should be exempt from taxation, and that the proportion of the profits of other societies that are derived from trading among members should be similarly treated. To this the Commission replied with the British Commission that a true trading profit does arise from the transactions of a coöperative society with its members as well as with non-members.

(3) On the profits of public authorities the converse view was taken. It was contended that local authorities could be regarded as "exercising a delegated power which in a less developed community would or could be exercised directly by the State," and that their profits cannot be used otherwise than within the powers (and they are limited in Australia) delegated to them. Generally the question of competition with private enter-

prise does not arise with regard to the activities of municipal bodies, and there can be little objection to the conclusion reached on these grounds. Advocates of decentralization will welcome the maintenance of this concession to municipal authorities.

(4) In the treatment of bonus shares the Commission was urged to reverse the practice of including them in assessable income. The arguments advanced were: (*a*) before their issue bonus shares are converted into capital by the decision of the company, and capital is not a proper object of taxation under an income tax; (*b*) the undistributed profits from which bonus shares arise have already been taxed; and (*c*) the issue of such shares does not increase the recipients' taxable capacity. The Commission, with two dissentients, agreed with these objections and recommended that bonus shares be not liable to income tax in the hands of the recipients. The minority upheld the practice of the department, provided that an adjustment is made "allowing to the shareholders the amount of tax already paid by the company on the profits." Bonus shares would be treated in exactly the same way as cash distributions, which may, like bonus shares, be turned into capital in the hands of the shareholder. This does not prevent the taxation of cash dividends, and there is no reason for differential treatment of bonus shares.

(5) Among the many other problems that were reviewed, the most interesting are those connected with deductions, upon which a final note may be added. Section 18 of the Income-Tax Act specifies the allowable deductions, and many more were urged by witnesses. The Commission upheld the generous terms of this section and recommended a few additional concessions. Thus "Losses and Outgoings" allowed should be extended to include such costs as legal expenses in-

curred in protecting the income, expenses of removing the business from one place to another, and subscriptions to trade associations. The deduction for life insurance premiums of £50 was upheld. There are sufficient grounds for differential treatment of this form of saving; further, it was estimated that two thirds of the exemptions granted under this provision were for incomes below £400. The maximum deduction was left at £50, despite the great fall in the value of money and the necessity of increasing premiums to provide adequate "cover." With regard to wasting assets it was urged that there should be allowed a deduction from assessable income of the provision made "for the amortization of the capital value of an asset that wastes in the production of income." Income-producing assets, other than live stock, may be divided into three groups: (*a*) material assets manufactured or constructed, such as buildings and machinery; (*b*) material assets consisting of natural resources; and (*c*) immaterial assets, such as interest in a lease, patent rights, etc. Under the act provision is made for wastage under (*a*), and under (*b*) to the extent of mining properties only. The Commission considers that a deduction should be allowed for "the sinking fund necessary to amortize the capital cost of immaterial assets the interests in which subsist for a term of years."

These and many other provisions increase the complexity of the income tax, but the steadily improving administration renders this possible. Considering the great geographical difficulties of administration and the independent character of the people, the administration of the income tax in Australia is an achievement of some merit. Doubtless many taxpayers find the Department very exacting, but on the whole its efforts to administer the law rigorously are to be commended. It is unfor-

tunate that income tax is now taken away from the Federal Taxation Department, but the example should not be altogether lost upon the state authorities. In both scope and administration the Australian income tax has a high place among the income taxes of the world, and the conclusions of the Royal Commission, with a few exceptions, can only improve this position.

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LABOR COSTS IN THE UNITED STATES COMPARED WITH COSTS ELSEWHERE

SUMMARY

The comparison is of labor costs in the sense of quantity of labor per unit of output. — I. Coal in the United States and other countries, 98. — II. The United States and Great Britain: iron and steel; other articles, 102. — III. Window-glass in the United States, Belgium, and Sweden, 107. — IV. Cotton goods in the United States and Japan, 111.

In the following pages I present certain data on differences in labor costs for selected commodities in different countries. The figures have been collected from scattered sources; they are the fruit not of systematic search, but of utilization from time to time of material that happened to come under my observation. They are presented here in the hope that others who have made similar observations may be able to enlarge the collection and add to its significance.

Figures of this kind bear, among other things, on the principle of comparative advantage or comparative costs, which bulks so large in the problems of international trade. When we speak of comparative costs in relation to international trade, we mean of course labor costs in the Ricardian sense. We mean quantities of labor, not money costs or expenses of production. And we measure costs in their relation to a physical product — to tons of iron or yards of cloth or bushels of wheat. The comparison is between the physical product which a given amount of labor, measured by units of time, will yield in the United States, say, and in England, or Germany, or Japan.

Exact information on labor costs in this sense is far from easy to get. The data on costs which are most abundant are quite unserviceable. They are account-

ant's figures; that is, figures on *money* costs, expenses of production, supply prices. The principle of comparative advantage or comparative costs, however, has regard, let me repeat, to the quantities of *labor* needed for a given physical output. Labor cost in this sense is a matter of no concern at all to the accountant, and ordinarily of equally small concern in the business man's reckoning of profit and loss. It is "labor cost" in quite a different sense from that which is sought in business figuring. What the business man and his accountants figure out as "labor cost" would be better described for most purposes of the economist by such a term as "wages expense" — the amount of money paid out in wages for a given quantity of product.

The labor costs of the accountant and business man, — the wages expenses — it is true, might possibly be converted into labor costs of the kind here to be considered. They could be so converted by reckoning also the money rates of wages per hour or per day. When these money rates of wages are known, the conversion would seem to be no troublesome matter. Yet, in fact, it is troublesome. The instances are rare in which the two sets of figures needed — wages expenses per unit of product on the one hand, wages paid per unit (hour or day) of labor on the other hand — are both available for a given product. Even when thus available, the data involve inference, and may call for qualification and explanation. They are, after all, indirect, not direct, and are less conclusive than observations or measurements which have in view an immediate comparison of the quantities of labor exerted for a given output. At all events, whether likely to be satisfactory or not, evidence of this indirect sort is not forthcoming.

I proceed to adduce some data of the direct sort which have come to my attention.

I

The Bureau of Mines of the United States Department of the Interior has been engaged for many years in an endeavor to diminish accidents in coal mines. Our country has had a disgraceful position in this regard, standing lowest among all the advanced countries in its record of accidents and fatalities. The Bureau of Mines, in trying to impress on coal producers and on the public the large proportion of fatalities both to men employed and to tonnage mined, has brought together figures of both kinds for various countries; that is, figures of tonnage and also of numbers engaged in mining. It has thus enabled a comparison to be made of the relation between man power and physical output, of tons produced per year for each man employed. Figures are available showing how many tons of coal were brought to the pit's mouth for each miner, and also how many tons for each worker of every kind (not only the underground men, but all employed about the mines). I give the figures for selected years.

TONS OF COAL PRODUCED

	1911		1914		1918	
	Per underground worker	Per worker of every kind	Per underground worker	Per worker of every kind	Per underground worker	Per worker of every kind
United States	819	681	803	673	1134	890
Great Britain	371	300	341	275	337	265
Prussia	381	285	389	284		
Belgium	244	176	200	143	207	138
France	300	216				
Nova Scotia		555		536		460
New South Wales		560		589		605
India		127		128		126

The effectiveness of labor in the United States is greater than in any other country. It is more than

double that of Great Britain or of pre-war Prussia, at least thrice that of Belgium, five times as great as that of British India. It is markedly greater than that of the nearest rivals, New South Wales and Nova Scotia.

The contrast would have been still greater had account been taken in the United States of bituminous coal alone; and it is this which would afford the better basis of comparison with other countries. The following figures show the annual product per year in the United States (all workers included) for the two kinds of coal over a series of years:

	Bituminous tons per head	Anthracite tons per head	Coal of both kinds tons per head
1914	724	505	673
1915	794	504	724
1916	896	548	818
1917	915	646	860
1918	942	672	890

Taking the year 1914 as representative, it appears that in the United States there were produced for each worker 724 tons of bituminous coal; while in other countries, where all the coal is such as would be classed in the United States as bituminous, the annual output per worker is for New South Wales 589, for Prussia 284, for Great Britain 275, for Belgium 143.

Similar in character is a comparison made by a well-known German economist [1] for another bulky and homogeneous commodity, — brick. The regions compared were Germany and the United States; and for the United States, the State of New York separately, and the country at large as well. In the United States, for the year 1905, the output of bricks per person employed was 141,000; for the State of New York alone, the output was 180,000. In Germany, for 1904, the out-

1. K. Ballod in the Jahrbuch für Gesetzgebung, 1910, p. 294.

put per head was only 40,000. The German brick, however, is larger than the American in the proportion of 3 to 2; making allowance for this difference, the German output, for comparison with the American, may be reckoned at 60,000. The discrepancy in favor of the United States remains very great. The effectiveness of American labor in brickmaking, for the country at large, is over twice as great; and for the State of New York alone it is thrice that of German labor.[2]

Coal and brick belong in the class of domestic commodities. So great is their cost of transportation that in the main they do not come within the domain of international trade. True, this is less unreservedly the case with coal than with brick. Coal moves over greater distances, and sometimes moves from country to country. England exports much coal, partly because the mines are near tidewater, and partly because freight rates are specially low on outward-bound shipping. From Germany coal moves across the border to nearby regions of the Continent. In the main, nevertheless, both commodities belong in the domestic class. Hence the advantage which the United States has in producing them shows its consequences rather within the country than in its exchanges with other countries. Tho the money rates of wages were in the United States double those in Germany (I speak of the pre-war period), the effectiveness of American labor in brickmaking was more than double; bricks might therefore be expected to be cheaper, at the works or nearby, than in Germany.

2. I cite a further bit of evidence on this same commodity. "I was in a brickyard at Singapore, where I calculated the product of the men. Their rate of pay was 35 cents per day in our money. I happened to have in my pocket a very accurate cost statement of a brickmaking company in one of our Eastern cities, signed by its president, and when the superintendent of the Singapore yard and I figured his labor (i. e., wages expense) together, they were precisely the same." W. C. Redfield, The New Industrial Day, p. 121.

So as regards coal. Money wages were higher in the United States than in England and in Germany; they were a little higher in England than in Germany, but the difference was not great enough to affect materially a comparison between the United States and the other two. The effectiveness of labor in coal-mining was greater in the United States than in either of them, and more so than in proportion to the money rates of wages. That is, coal would be expected to be cheaper in the United States (at the pit's mouth or nearby).

In both commodities the United States seems to have a comparative advantage, which, however, is prevented from having an effect in international trade by the high cost of transportation. The American coal mines, unlike those of England and Germany, are situated far from the border and far from tidewater. Only as regards Canada is there a possibility of transportation across the political border; and as regards Canada, it may be remarked, the trade of the United States has the characteristics of domestic rather than of international trade. Were it not for the inhibition arising from cost of transportation, — but for the fact that brick and coal cannot be carried across land and ocean as, for example, cotton can be, — we should expect coal to move from the United States to Great Britain, and both coal and brick to Germany.

Dr. Ballod makes a comparison [3] for another commodity which is chiefly domestic — even tho, like coal, it passes occasionally into the international field. In breweries, he finds that in Germany there were turned out, in 1907, 614 hectolirtes of beer per workman; in the United States (1900) very nearly 1000 hectolirtes per workman. The physical output is thus as 2 to 3. I I would not undertake a judgment on the delicate ques-

3. I. K. Ballod, op. cit., p. 283.

tion of the allowance to be made for a difference in quality between the American and the German beverage. Merely on the basis of quantity, it would seem that Germany has a comparative advantage in beer over brick and coal; that is, she has, in the phraseology better adapted to this sort of situation on her part, an inferior disadvantage. The productivity of her labor is less than that in the United States for both groups of commodities, — beer on the one hand, coal and brick on the other, — but the disadvantage is less marked in the first-named group. Perhaps, in the land of Gambrinus, a better quality of the product makes the German disadvantage even smaller, the comparative advantage more marked.

II

Between the United States and Great Britain (that is, the United Kingdom) some most interesting comparisons of wide sweep have been worked out by Mr. A. W. Flux. That able economist and statistician has used for the purpose the census returns of production for the year 1907 in Great Britain (the first returns of the kind gathered in that country) and those for the year 1909 in the United States. Here, as with the coal figures, what concerns us is the product per man for each several commodity in the two countries; the total physical output in each of the selected industries being divided by the total number of men employed. Simple tho this may seem, it is by no means easy to arrive at usable results. In order to render the figures for the two countries comparable, it was necessary to make sure that the demarcation of each industry was the same in both — that there was no divergence of classification and scope. Allowance had further to be made for the difference of two years between the census dates (1907

and 1909) and for differences in the activity of trade and industry which might affect the output. The last-named factor was most carefully considered by Mr. Flux, but, as it happened, proved not to be of much moment. More important was the need of confining the comparisons to industries turning out the same homogeneous product in both countries. Differences in quality might obviously vitiate comparisons. Mass products, the same the world over, turned out in such large amounts that the census authorities can scan them with ease, and that minor errors are likely to offset each other — these offer the best possibilities for such inquiries; and it is for these that Mr. Flux worked out the comparisons.[4]

First, pig iron. The output per person employed at blast furnaces and steel works was 39 tons in Great Britain in 1907; it was 84.5 tons per person employed in the United States in 1909. That is, for each person employed the output was more than twice as great in the United States.[5] For steel the difference was even greater. The output per head was 25 tons in Great Britain, 77 tons in the United States; nor was the difference any more to be explained in this case than in

4. Mr. Flux put his results at my disposal in manuscript form many years ago (before the World War), but was unwilling to publish them, tho urged to do so. He has most kindly permitted me to use them here. Some among them he has used in his paper on the Census of Production in the Journal of the Royal Statistical Society for May 1924, p. 363. In that paper he has also made most interesting comparisons between the pecuniary yield per workman in various British and American industries, and between the wages rates in the two countries.

5. These figures refer to manufacturing operations in the strict sense — to those included in accountants' reckoning of "conversion cost." They stand for labor costs *above* ore, coal, limestone. The comparisons were by no means easy to work out; because the census practice in the United States is to report blast furnaces separately, whereas in Great Britain they are aggregated with steel works and rolling mills. Mr. Flux has most kindly aided me by putting at my disposal the adjusted figures given in the text.

that of pig iron on the ground of discrepancy in the character of the article (heavy steel, say, against more finished forms).

Some further figures on the steel industry of the two countries are noteworthy. They relate to the operations of blast furnaces, steel works, and rolling mills. The tonnage figures are compared on the basis of the total for crude products, that is, for pig iron and crude steel and rolled (or otherwise manipulated) iron; with deduction for the amount of pig iron used in making the other products. They are stated in proportions, showing merely relations between conditions in the two countries.

	Proportion of United States	to	Great Britain
Total tonnage	2½		1
Numbers of workers	7		6
Horsepower per worker	10¾		5¼

Tho the number of workers in the United States is not markedly greater than in Great Britain, the tonnage produced is more than twice as great. But the equipment of the workers, as indicated by the horsepower of the machinery employed, is twice as great. No doubt, in a strictly accurate economic accounting, the machinery employed should also be reckoned in terms of labor. That is, there should be reckoned, in addition to the labor currently applied by the workers of the year, some part of the labor given in previous years to making the machinery—that proportion of the previous labor which corresponds to the depreciation of the machinery during the one year. Thus revised, the figures would show not quite so great a superiority in effectiveness for the United States. A marked superiority none the less would remain. And the explanation of that superiority, it is to be observed, lies in the very fact that more horsepower, more machinery, was used. In the lan-

guage of everyday life, it was the greater use of power and machinery that most contributed to making American labor effective and productive. In the language of economic theory, it was the use of previous or ancillary labor, given to making the machines, which — combined with the necessary waiting — served toward making *all* the labor more effective.

The reader will bear in mind that we are concerned solely with the fact of differences in physical output. The causes of the differences are another matter. But certain other figures, which have at least a possible bearing on the causes (the explanation) of the differences, may be of interest. It appeared that, for each ton of pig iron produced, there were used in Great Britain 2.48 tons of ore and cinder (limestone); in the United States, 1.96 tons. In this regard, the effectiveness of labor was somewhat greater in the United States, tho not strikingly greater. The advantage was presumably due to a simple physical cause — the greater richness of the American ore — and not to any human cause, such as greater use of power and machinery, or more effective exertions by the workmen. As regards consumption of coal, there was a similar difference. For each ton of pig iron, 2.09 tons of coal were used in Great Britain, 1.74 in the United States. Here also the main explanation is probably to be found in the better quality of the American coal used in the blast furnaces. I know of no evidence to indicate that there was better handling or utilization of the coal. In the main, the final difference in outcome for iron and steel must be ascribed, not to physical causes, but to human causes, among which the outstanding one seems to be the greater use of power and machinery.

A difference equally striking appeared in the case of tin-plate. The total weight of tin-plate produced was

approximately the same in the two countries: 529,000 tons in Great Britain, 587,000 tons in the United States. The number of persons employed was, however, vastly greater in Great Britain: 20,628, against only 5846 in the United States. In terms of physical output per person employed, the figures were 25.6 tons per head in Great Britain and 100.4 tons per head in the United States. As Mr. Flux remarks, "while the quality of goods was not necessarily equal, the divergence in the net output [in terms of money] [6] appears to be related rather to the volume of output than to the price obtained per unit of quantity."

Another industry is that of cement-making — a heavy-product industry, turning out mass quantities readily comparable. In the United Kingdom Mr. Flux found the output per worker employed to be 194 tons for the year (1907). In the United States it was (1909) 395 tons. In round numbers, the American worker turned out twice as much cement as the British.

In sugar-refining, the number of tons refined per year was 87 in Great Britain, somewhere between 150 and 180 tons in the United States. The figure for the United States was somewhat uncertain because the statistics did not make it clear that all the American sugar consumed went through the refineries; some fraction certainly did not; the maximum figure (180 tons) was computed on the supposition that the whole supply was refined. Even after making all allowances and taking the lowest possible figure (150), the contrast with the British figure (87 tons) was marked. In flour-milling the contrast, even tho less great, was also marked. The output in Great Britain was 153 million cwt., against 429 million in the United States; the number of persons employed was 36,177, against 66,054. This works out

6. The price obtained (average value) was £14 per ton in Great Britain, £11 per ton in the United States.

in round numbers 4250 cwt. per head in Great Britain, compared with 6500 per head in the United States. And here too the figures of horsepower in the industry point to human factors as the more important among the causes of the difference. The horsepower per employee in the flour-mills of Great Britain was 5, in the United States 13. Capital, plant, machinery, played a larger part in the United States.

In other industries, where direct statements of physical output were not available, it was none the less possible to arrive at similar comparisons. This was the case where the output in terms of prices (stated values) was known, and where it was also known that the prices and qualities of the products were virtually the same. In butter, for example, the net output in Great Britain was £125 per head, in the United States £242 per head. Differences in price for the article between the two countries were negligible. It follows that physical output was in the ratio of the value output, that is, nearly 1 to 2.[7] In the case of ice ("artificial" ice), on the other hand, no sensible difference between the two countries appeared. The physical output was 490 tons (of 2240 pounds) per head in Great Britain, 600 tons (of 2000 pounds) in the United States; the ratio being 11 to 12.

III

For another commodity, window-glass, comparisons of the same sort can be made; in this case for the United States, Belgium, and Sweden.[8] The figures were put

7. I have not used Mr. Flux's figures on leather gloves (p. 364 of his paper in the Statistical Society Journal), altho they are given in terms of physical quantities, i. e., dozens of gloves. In this case differences of quality between the British and the American article are so great as to vitiate comparisons of physical quantities.

8. These figures were brought to my attention by Mr. Bertil G. Ohlin, who was a student in the Graduate School of Harvard University in 1922–23. My inability to use Swedish would have made them quite unavailable but for Mr. Ohlin's kind services.

together by the Tariff Commission of Sweden; they were computed as part of an investigation of the relation between costs of production (in the business sense) in Sweden and in the important competing countries. They are of special interest because for the United States they give two sets of data, one for the hand-blown glass, the other for the glass made by machine. The industry in the United States has been revolutionized in recent times by the invention and successful operation of elaborate machinery.[9] The new process for making window-glass—one further phase in the conquering march of the machine — has largely displaced in this country the glass-blower, who dominated in the handicraft stage of the industry. During the great war, as it happened, there was a pause in this process of displacement. Various neutral countries turned to the United States for supplies, since Belgium (which had been the most important country of export) was in chains. Consequently the American hand factories of the older type, and the glass-blowers working in them, experienced for some years a revival of activity and prosperity. This was no more than a temporary interruption of the main trend of development; the machine process was triumphing in the United States, and indeed seems destined to rule soon in other countries also. During the stage of transition, prolonged in the United States by the war conditions, machine and handicraft processes were applied side by side. Hence comparisons were made by the Swedish investigators not only

9. On this striking industrial overturn, see an excellent publication of the United States Department of Commerce, Miscellaneous Series No. 60 (1917): The Glass Industry, Report on the Cost of Production of Glass in the United States.

The machines referred to in the text are *blowing* devices: an intricate apparatus for doing with compressed air what the hand-blower does with his lungs.

between the European countries and the United States, but between the two methods of production in the latter country alone.

The figures follow. They give the output per head, in terms of square meters.

WINDOW-GLASS OUTPUT
(Sq. meters per head)

	Year	Month	Day
Sweden (1913)	2890	260	10
Belgium (1906)	3400	310	11
United States (handblown, 1915)	2800	400	16
United States (machine, 1915)	5250	650	21

In considering the figures, regard must be had to differences in working arrangements. The season in the United States is but seven months in the hand factories, eight months in the machine factories; during the hot summer months the works are shut down. In Sweden and Belgium the operations run through ten to eleven months, and in Belgium work goes on through the Sundays. Apparent discrepancies between the figures for year, month, and day are thus accounted for.

It appears that, for the hand factories, there are no marked differences in the annual output per head for the three countries. Per day, the effectiveness of labor is greater in the United States (16 as against 11 in Belgium and 10 in Sweden); but for the year, the United States ranks lowest. Belgium ranks highest for the year, but this is the result mainly of prolongation of labor through a larger portion of the year.

When, however, comparison is made between the machine factories of the United States and the hand factories in all three countries, the case is quite different. The superiority of the United States is great. The output per day is over twice as large for each workman in the United States as in the two other countries. Per year the difference is not quite so large, because of the smaller

number of operating days. The machine processes, however, are carried on in the United States over a larger number of days than are the hand processes in that country; hence, while the superiority of the machine is not so marked in the American output per day (21 to 16), it becomes so as regards the annual output (5250 against 2800). Any one who has seen both processes at work, as I have done, will readily understand that the machine operator can keep at his task through more days and through hotter days than can the hand-blower.

It is instructive to contrast these figures of labor cost — that is, of labor bestowed — with cost figures of the ordinary sort. The same investigation on window-glass brought together the expenses of production, or money costs, in the three countries, and also stated separately the wages expenses.

WINDOW-GLASS

Money costs of production per box of 100 sq. ft.

	Hand-blown			Machine-blown
	Belgium 1912	Sweden 1912	United States 1915	United States 1915
	cents	cents	cents	cents
Raw material	19.6	43.9	32.7	29.7
Fuel and power	53.3	103.4	31.6	26.3
Packing	30.0	13.0	27.1	22.2
Wages	105.6	97.8	222.2	134.5
Miscellaneous expenses	32.2	45.0	55.2	63.8
Total	$2.41	$3.03	$3.69	$2.77

It will be seen that money cost is much higher in the United States for the hand factories. But when the American machine product is compared with the hand product of Belgium and Sweden, the money cost is about the same, — indeed, a little lower than in Sweden. The

main item is the wages expense. For the hand factories, this item is more than twice as high in the United States. The money rate of wages for the workmen, and especially for the blowers, is higher, in accord with the higher pecuniary standards prevailing in American industry at large; the effectiveness of the labor is no greater; the wages expense per unit of product is therefore higher. In the machine factories, the money rate of wages is no less high; but the effectiveness of the labor which operates the machines is greater; therefore the wages cost per unit, while somewhat higher than in Belgium and Sweden, is by no means higher to the same degree as under the hand process. For both processes, the United States has lower money costs for fuel and power, a natural concomitant of the effectiveness of its labor in producing coal (as shown in the preceding pages). In sum, the United States has lower labor cost in producing window-glass by the machine process, but no advantage at all in producing by the hand process.

IV

For Japan and the United States I am able to cite data in which again money cost can be contrasted with labor cost, or at least with indicia of labor cost. The United States Tariff Commission caused inquiries to be made in 1921 on competition between the United States and Japan.[1] Among the industries examined was the cotton manufacture; and in that industry, attention was given to staple products — yarns and plain woven goods — of such character that comparisons could readily be made between conditions of production in the two countries. It should be remarked, however, that the

1. The Japanese Cotton Industry and Trade; Report by the United States Tariff Commission, 1921. The date for which the information is given is 1920. The passages on which the statements in the text are based are at pp. 100, 114–117.

homogeneity is by no means complete. Japanese yarn, for example, even tho it be of the same count, is not the same thing as American yarn: it is inferior in quality. The inferiority, as it happens, is not a handicap to the Japanese yarn in China, the chief market to which it is exported; but it would much affect the sale if exports were attempted to the United States or to a European country. The same sort of inferiority appears in the woven cloths. This difference in quality serves to render even more striking the comparisons which follow, since these make no allowance for the poorer quality of the Japanese product.

The outstanding fact is that the output per laborer employed is four times as great in the United States as in Japan. The output of yarn (number 20, that is, medium yarn) per spinner is 104 pounds per day in Japan, 414 per day in the United States. The output per weaver is 145 yards daily in Japan; it is 450 yards per day in the United States on plain looms, 1100 yards on automatic looms. Plain looms in the United States are obsolescent. Only older mills still use them for fabrics of the kind selected for this comparison; the automatic loom is the representative apparatus. Both for spinning and weaving, some qualification needs to be attached to the comparisons. The American spinner has the aid of a doffer boy or girl; the American weaver on automatic looms has the aid of a similar attendant, who supplies fresh bobbins. But the inclusion of this additional American labor would affect the final figure but little. Nor would it be much affected by the inclusion of still another item, namely, the higher capital cost of the automatic loom. I have already indicated in what way this circumstance should be taken into account; it can be of but slight effect on the total of labor involved per unit of output.

The same contrast appears, and no less strikingly, when it is presented in the inverse way. We may ask what is the number of workmen employed per unit of machinery; thus envisaging not the number of units produced per workman, but the number of workmen per unit of product. "A Japanese cotton mill requires approximately four times as many employees for the same amount of machinery as does a similar American mill. . . . On a standard count of yarn the average Japanese spinner tends about 240 spindles, while spinners in an American mill, with some assistance from a doffer, tend at least 1000 spindles and frequently more. Similarly, in weaving staple cotton sheetings, the Japanese weaver seldom operates more than two plain looms, while the American weaver, with perhaps some assistance in supplying fresh bobbins, normally tends from eight to ten plain looms, and on looms equipped with automatic filling batteries, 20 looms per weaver is normal, and 24 or 26 is not uncommon." Of course the product for a given outfit of machinery is not necessarily the same in the two countries. What difference there is, however, would be in favor of the American mill; its machinery, we may safely assume, runs faster and more continuously, turns out more per hour and per day, than the Japanese. Not only as regards the specific operations of spinning and weaving, but for all the mill labor and for the mill product in its completed form, the physical product would doubtless be found at least four times as great in the American mill.

The figures on money cost — accountant's cost — for the two countries reflect the same situation and substantiate the conclusions. Money wages in Japan are much lower. Japanese weavers, for example, get one fifth to one sixth of what American weavers get. But so much greater is the effectiveness of labor and capital in

the United States that the weaving cost (money expense) per yard of cloth is three eighths of a cent (0.375) in a Japanese mill and but one fourth of a cent (0.270) in an American mill working with automatic looms. In spinning, with the same differences in money wages, the manufacturing ("conversion") cost of a pound of number 20 yarn was 8.7 cents in Japan, 11.2 cents in the United States. The final figure in this case is higher for the United States, wages being lower in Japan *more* than in proportion to the lower effectiveness of labor. If account were taken of the poorer quality of Japanese yarn, the effective money price — the competitive position in the market — would be the same for the two products.

I am not here concerned, however, with the application or implications of the material presented in the preceding pages. To consider the competitive positions of the different countries in making or marketing the several commodities, or the significance of the figures as regards the prosperity of the countries or their national dividends or their money incomes and prices — anything of this kind would reach into very complex problems of economics. The present paper merely directs attention to the simple fact that there are marked differences in labor cost. Further data of the same sort would, I am sure, be of value in many directions; and I hope they will be forthcoming.

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REVIEWS

PATTEN'S ESSAYS IN ECONOMIC THEORY[1]

PROFESSOR PATTEN'S favorite method of publication was the essay. In the never-ceasing stream of periodical literature the most noteworthy essay soon passes out of sight; but Dr. Tugwell has salvaged for us twenty-three representative specimens of Patten's output. Their appearance within the covers of an attractively bound volume gives occasion for pondering again some of his peculiar speculations and judgments and, for a time at least, will widen the circle of his readers. How lasting will be the impression made by his writings, is another question. Patten possessed no unusual art to make unusual thought appear clear and acceptable. Those who have never experienced the direct impact of his personality may indeed be puzzled by the great admiration in which he is held. Professor Seager in his introduction to this volume calls him "the most original and suggestive economist that America has yet produced." But the skeptic may ask, What has he contributed to our understanding of the world? Pretty regularly he has received the tribute of being "suggestive," but we are not told precisely which suggestions have led to definite increments of knowledge. The very terms in which he is praised imply that he started problems without solving them. That indeed would be high praise if others had found his problems fruitful. But Patten made few converts to any of his original ideas, and the mental reactions of those who disagree are not easily traced.

His greatest influence was among those who came into per-

1. Essays in Economic Theory, by Simon Nelson Patten. Edited by Rexford G. Tugwell, with an Introduction by Henry R. Seager. New York, Alfred A. Knopf, 1924.

sonal contact with him — friends, colleagues, and students. He was an incomparable teacher. The present reviewer can testify from his own experience to the remarkable intensity, persistence, and freedom of discussion in Patten's graduate classes. It was impossible to take Patten's ideas on faith. But no instructor was ever less dogmatic in manner, less expectant of uncritical acceptance of his own views. He made one realize that victory or defeat in the battle of ideas was not a personal matter. Ideas, whether advanced by teacher or student, were there to be tested and not to be sensitive about. The only thing that mattered was truth. Agreement was sometimes reached after long debate, and often not. But as the years ran on and the hours spent in Patten's class-room receded into the past, it became increasingly difficult to adjust one's thinking to his. He did not retain his hold by means of his published work. There was no distinct body of adherents, no school to disseminate and develop his characteristic views. But in spite of all reservations in regard to his methods and conclusions, those who have known him will always feel that he was a man of true greatness, one who had striven greatly and in whom there was no littleness or sham.

In making up this collection of essays, the editor states that it was his aim to exclude "pretty much everything that does not bear upon economic theory." None of Patten's later psychological papers are included, altho Patten himself regarded psychological foundations as an integral part of the economist's business. His biological and historical speculations appear only in passing and by implication. By this restriction to the economic writings, the collection gives a stronger sense of the continuity of Patten's thought than can be retained if one tries to follow all of his flights into other fields. Taken together with the *Premises of Political Economy*, published in 1885, the book presents an almost complete record of his work in economics. The absence of the monograph on the *Theory of Consumption* may be noted, but most of the ideas there set forth can be found in the *Theory of Dynamic Economics*, which is included, and also in a number of other places.

The first eight titles in the collection may roughly indicate the first period of Patten's activity as an economist. At that time he had not altogether ceased to read the classical economists, or at least to discourse on what he had found in them. His interest, however, was not in getting a coherent picture of the economic system as a whole, which means inevitably a formulation of the conditions of equilibrium, a "static theory," but rather in the possibilities of improvement in the life of mankind created by "progress." He aimed in short at a "dynamic theory," which should demonstrate what happens because of a growing surplus. The consideration of how increase of surplus is brought about by rationalizing consumption, and the problems in consumption forced upon us by increase of productive power, form part of that theory. It is very optimistic doctrine and set in strong contrast to the pessimistic outlook of the classical school. Patten's psychological assumptions during this period are hedonistic. Two of the essays, that on Malthus and Ricardo and that on the Interpretation of Ricardo, in seeking to explain these two writers by their economic background, foreshadow Patten's preoccupation with the "economic interpretation of history" in the second period of his literary career.

This second period is marked by bold speculations in psychology, biology, and history. *The Theory of Social Forces*, with its mechanistic hypothesis of human thought and action, published in 1896, is followed three years later by an ambitious attempt at historical interpretation, *The Development of English Thought*. In 1902 appeared the *Theory of Prosperity*, the only predominantly economic work of this period, in which, however, there is a significant emphasis on the influence of heredity. *Heredity and Social Progress*, perhaps his worst book,[2] appeared in 1903. Psychologists and biologists, it must be admitted, were not much impressed by his efforts in their field. Historians gave him some attention, but had no difficulty in showing that a very large part of what he presented as history was imaginary. Social workers drew inspira-

2. The worst of those in scientific fields. He also published a collection of social "uplift" songs, Advent Hymns, and a novel, Mud Hollow.

tion from *The New Basis of Civilization* (1907), his most popular book. Sociologists probably formed the group of readers most interested in his literary output. An amusing aspect of the situation is that Patten always protested that he was not a sociologist, but an economist in opposition to sociology.[3] It is not easy to indicate essays in the volume under review which are characteristic of the second period. Patten's distinctive output at this time, assembled in the books just mentioned, lay outside the field of economic theory as most of us would conceive it. One essay, however, *The Present Problems in the Economic Interpretation of History*, clearly belongs here.

A third period in his career is indicated by a return to the problems of his first, or, as many would have expressed it, a return to economics. The two essays, *The Conflict Theory of Distribution* and *The Political Significance of Recent Economic Theories* belong here, and also the monograph, *The Reconstruction of Economic Theory*, published in 1912. It is fortunate that Dr. Tugwell found space for this monograph as well as for the one on *The Theory of Dynamic Economics*, published in 1892 and long out of print. He has thus made accessible the most comprehensive formulations of Patten's ideas at two different periods, the earlier one that of his greatest achievement in economic analysis. The history of economic and political thinking since that time, as it appeared to Patten, is sketched in the reminiscent passages in the first chapters of *The Reconstruction of Economic Theory*. Being history as only Patten could see it, its value is autobiographical.

Patten's fourth and last period is that of the war and the years following, and is represented by the last five essays in the collection.

The division of Patten's life into periods is doubtless open to objections. There is much overlapping, and, after all, in his methods of work and points of view there is never any

3. A fairly complete summary of Patten's ideas so far as they would interest the sociologist, and as expressed during this period, can be found in Squillace, Le dottrine sociologiche, of which there is a good German translation. See also Bristol, Social Adaptation. Squillace has prepared an Italian translation of The Theory of Social Forces.

great change. Throughout his career as an economist his mind was on problems of consumption and on change and progress. The optimism characteristic of American economics generally he carried further than was possible to any other thinker of his generation. The age of pain and deficit, "in which fear and suffering drive man to his daily tasks," lies in the past, and the age of surplus and pleasure is at hand. Productive forces obey a law of increasing, not of diminishing returns. Tho in some matters prophetically sensitive to the first signs of change, he was blind to the more disquieting movements of the day. It is not till the first decade of this century that he gives much notice to class conflict, and then to consider it as a theory rather than as a condition. Imperialism and competitive armament are not alluded to in his writings until the World War was upon us.[4] Then, to be sure, he attacked the problem in such characteristically individual fashion that it cost him his position.

To production and consumption Patten attributed greater significance for human welfare than to distribution. Of the theory of consumption he has been heralded as the prophet. Certainly no other economist has given the subject such emphasis. But large returns in this field, which for a time it was the fashion to declare the scene of future advance, have not been forthcoming. Dr. G. P. Watkins has published a study in part devoted to the lines traced by Patten, while Veblen, in his *Theory of the Leisure Class*, has discussed the subject from an entirely different point of view. In general, economists have not followed in Patten's footsteps What is done by people in the consumption of wealth is of great significance to welfare and the worth of human life, and for suggesting and emphasizing this we must be grateful to Patten. But what can be said about consumption falls chiefly within such fields as dietetics, hygiene, aesthetics, ethics, and generally outside the domain in which the economist is competent. In passing let us note, as characteristic of Patten's reflections on

4. In the Reconstruction of Economic Theory, published two years before the outbreak of the war, he refers to the "steady strides of international peace." (Essays, p. 328.)

the subject, the statement in the last essay of the book. "It may be estimated that from a given commodity-income there may now be obtained thirty per cent more satisfaction than was possible twenty years ago." The data for the estimate are not presented.

His views on distribution in their later formulation may be found in the two essays and the monograph mentioned above as belonging to his third period. In the essays on *The Conflict Theory of Distribution*, he announces the need of a theory to give "increased emphasis to coöperation and to reject as false, arguments and doctrines that favor discord or emphasize class interests." The older static theory fails in this because it divides society into "three groups whose interests were opposed." In America, however, "profit-holders blend with the holders of rent and interest and think of themselves as a social unit." The political significance of this blending may be granted. The logic of the single tax, for instance, makes so little headway because it has no distinct class appeal. But does that relieve the scientific analyst of the necessity of explaining three separate forms of income? A similar blending of interests is being worked out for the laborers. "They own houses, they receive special rents from the position of local advantage they hold, they enjoy monopolies through their trade unions, and they derive great advantage from municipal expenditures. . . . Their income is thus not pure wages, but a diffused income derived from many sources." But does this do away with the logical need for a theory of wages?

In the essay on *The Political Significance of Recent Economic Theories*, following his usual procedure of establishing a "contrast," Patten sets his ideas in opposition to Clark's productivity theory. It may be remarked that his antitheses are never followed by syntheses. His exposition of the history of thought is always Darwinian, never Hegelian. It presupposes the survival-of-the-fittest doctrines and the elimination of the others. His theory, as opposed to that of Clark, shows "that distribution is effected solely by price movements." It turns out to be "dynamic theory," treating only of the divi-

sion of the social surplus due to progress and defined in this essay as "the difference between total values and total cost." The theory should, therefore, be represented as supplementing static theory, not displacing it, as Patten implies. Granted that some of the shares in distribution have a part in the surplus, does that make it possible to account for each share other than in its totality? He quotes from *The Theory of Dynamic Economics:* "Of the factors necessary for production, that factor which tends to increase at the slowest rate will reduce the shares of the other factors to their lowest limit, will have the benefit of all improvements and must bear all permanent burdens." The slowly increasing factors he speaks of as possessing monopoly power, a confusing terminology, in the use of which unfortunately he does not stand alone among economists. He adds to the confusion by calling them "residual claimants." They "absorb all the benefits of progress." The fortunate shares are monopoly and wages. "The more productive land is, the lower will be rent." This astonishing statement really means that increase of productivity will lower rent — an idea whose persistence in economic literature can be traced to the fact that, following the classical economists, only agricultural rents are thought of. Through the fall in the value of their product, particular lands may, indeed, have their rents lowered. The purchasing power of the rents of other lands, however, is thereby increased. A general increase in the productivity of labor would increase the differential income known as land rent. As for capital, continues Patten, the larger its productive power the less will be the rate of interest. Adherents of the productivity theory would of course dispute this. In the essay on *The Conflict Theory of Distribution,* interest is traced to a process of valuation suggesting a time-preference theory; and it may be recalled in this connection that as early as January 1889 Patten set forth a time-preference theory in the pages of this journal.[5]

His statement that general increase of product increases

5. Böhm-Bawerk's Positive Theorie appeared in 1888, but the English translation did not appear till 1891. Patten reached his theory independently of Böhm-Bawerk.

the share of monopoly is worth noting and accepting, whether we take the term monopoly in Patten's sense as indicating only relative scarcity, or in a more correct sense. The idea is indeed not entirely new and follows easily from the theory of value. The ordinary manuals, however, do not usually set it forth, but treat of monopoly apart from its effect on the income and productivity of other industries. But is monopoly "no perversion of prices"? Is "industrial monopoly a natural result of price movements"? It depends on what is meant by monopoly. Statements are not infrequently found in Patten which may be less difficult to accept if we allow his terminology.

Wages, according to Patten, are increased by laborers moving to higher margins. They are also increased by organization, which does away with the determination of individual wages by the marginal man. Competition between workers ceases, and groups offer their joint product and "must be dealt with as units." "The growth of wages would be limited only by the productivity of industry." That this conclusion can be applied to the general level of wages may be questioned. A union could not win a rate of wages for its members based on average instead of on marginal productivity, unless it could compel the full employment of its whole membership. Otherwise the high wage would result in the discharge of men until the rate paid was based on marginal product, the discharged men meanwhile depressing wages in other lines.

If Professor Clark's view of monopoly as "a general perverter of the industrial system" is true, the need of the establishment of cost prices by government follows. This calls for physical valuation. The public is already agreed that the cost principle should be introduced in railroad rates. But, argues Patten, there are other fields in which "watered costs" can be found. "At present there are four classes of property that gain a relatively large share of the benefits of improvement and whose value and costs are most frequently watered. They are railroads, protected industries, western farms, and city lands." Applying the principle of physical valuation to railways will not benefit the public unless it is also applied to

farms and city lots. "Low railroad rates mean a high value of western farms with higher rents and more congestion in eastern cities." There is matter here for long discussion. As so often in reading Patten, the reader will wish "to be shown"; but Patten drives right on. A limited application of the principle of physical valuation, a partial socialism, "merely reduces the rate of progress" and gives "new strength to the demand for more thorough-going socialism. The line of cost is the line of bankruptcy, and the state must soon take over any industry or enterprise that must face unexpected costs but cannot retain extra gains. We cannot get free trade through low tariffs, cheap food through low railroad rates, lower house rents by reducing the price of street-car transportation, nor can we get natural low prices through state control of particular industries." But rejecting Clark's view of monopoly and what he considers its practical consequences, Patten puts his faith in the increased power of substitution brought about by improvements. "The gains of monopoly are temporary, due to sudden increase of productive power. But each generation will see its sphere reduced."

The above commentary on Patten's views on distribution may give the student some idea of the struggle that is before him if he turns to Patten for light on economic theory and social reform. One may agree with Professor Seager's remark that "those who did not know Patten, the man and teacher, cannot but gain new understanding of economic phenomena and new inspiration by reading his writings." But it should be added that they must be prepared to fill in *lacunæ* in argument and documentation, and that sometimes this may prove difficult, if not impossible. A large part of Patten's statements are hypotheses in need of verification. He did not himself stop to verify. As Professor Giddings puts it, "he did not 'check up' his visions."

The editor has done his work competently, but it may be regretted that no photograph of Patten has been introduced as a frontispiece to the volume. Would it be feasible to add one to a reprint of Dr. Tugwell's fascinating "Notes on the Life and Work of Simon Nelson Patten," published in the

Journal of Political Economy for April 1923? Such a reprint, possibly somewhat expanded, would certainly be welcomed by those who have known Patten and have been associated with him. To them his writings must always be disappointing, because they fall so far short of expressing the power of his personality. They cannot but feel that he was bigger than anything he ever wrote, and greater than the world at large will ever realize.

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DIEHL'S THEORETISCHE NATIONALÖKONOMIE[1]

THE time when foreigners could identify German economics with the historical school has passed. In recent years works on theory in the German language are no longer almost exclusively from Austrian authors. That Professor Diehl is writing four volumes on theoretical economics is a symptom of the revived interest in the subject. Whether this interest will result in a new German school of theory remains to be seen. In Professor Diehl's first two volumes, at least, there is nothing to indicate that the German authors are going to agree among themselves or to adhere to any existing school. The two later volumes are to deal with the subjects of exchange and distribution; they will show most clearly how far Professor Diehl's peculiar conception of economics and his peculiar methodology lead him to challenge the results of other theorists.

1. Diehl, Karl. Theoretische Nationalökonomie. Erster Band: Einleitung in die Nationalökonomie (Jena, Fischer, 1916), pp. ix, 500. Zweiter Band: Die Lehre von der Produktion (Jena, Fischer, 1924), pp. viii, 372.

The size of Professor Diehl's work comes in part from his definition of theoretical economics. It includes not only questions of theory but also questions of policy (I, 84). Thus minimum-wage legislation and taxation of land rent come into theoretical economics. Professor Diehl takes the somewhat peculiar position that the economic scientist should discuss questions of policy, even tho his answer cannot be accepted as scientific. Professor Diehl holds that evaluations (*Werturteile*) are necessarily subjective (I, 135), and demands a clear separation of politics and science (I, 386). There is no ethical science (I, 389), and politics cannot be a science (I, 19). If such is the case, the reviewer cannot understand why it is part of the economist's task to assume a position on questions of economic policy (I, 126). Professor Diehl's treatment of theoretical economics is extended for still another reason: because he refuses to characterize theoretical economics as abstract, practical economics as concrete (I, 85). Theoretical economics, as he conceives it, deals with the phenomena common to all branches of economic activity; practical economics with those peculiar to agriculture, industry, or commerce.

Our author divides theoretical economics into four parts: production, exchange, distribution, and consumption (I, 83). Each of the parts, except the last, has a separate volume. Consumption, for some unexplained reason, is to have no place. The first volume, which precedes them, is called an introduction to economics. The title does not appear well chosen; much of the volume demands a far greater acquaintance with economics than a stranger may be expected to possess, and it is certainly more difficult than volume two. A better title would have been the philosophy and methodology of economics. The book is divided into two parts, one on the nature and tasks of economic science and a second on the systems and methods of economic inquiry. Professor Diehl's wide acquaintance with other writers and his skillful exposition of their views enable him to make part two a valuable survey of the schools of economics. He disclaims any desire to write a history of economic doctrines; he is primarily concerned with the "scientific" character of economics

and its methodology. Unfortunately for foreigners, he discusses almost exclusively German and Austrian authors; the Physiocrats and the Classical School are the only foreigners to receive any great attention. His criticism of the various schools, tho it necessarily involves a good deal of repetition, is always provocative and sometimes convincing.

Professor Diehl's own school he calls social-legal. His first volume is dedicated to Rudolf Stammler, and much of it is devoted to the explanation and defense of some — not all — of the applications of Stammler's philosophy. In many respects Professor Diehl's position may be called characteristically German. It involves no such revolutionary break with German traditions (or any other traditions) as Professor Liefmann has proposed. Like most German economists, Professor Diehl's point of view is universalism, not particularism or atomism. He starts from society, not from individuals. The social tie that binds the individuals together alone makes economics possible. National economy is not a summation of individual economies, and national prosperity is no summation of the prosperity of individuals (I, 4, 5). He is little concerned with the "human nature" of individuals; apparently he believes in an institutional man. Only by interpreting him to hold that the permanent characteristics of men are of little importance in comparison with their institutional environment, can the reviewer reconcile his statement that no proposition has been so disastrous to economics as that "human nature does not change" (I, 202), with his later assertion that human nature has not changed but the conditions of human coöperation have (I, 234). Professor Diehl apparently believes that the freedom of the individual's will is less significant for the economist than the freedom of the social will.

Further, our author follows a German tradition prevalent since Kant and Fichte, in his emphasis on the general *will* which creates society. Economics deals only with phenomena for which the common activity of society, conscious of its aims, is necessary. No social phenomena are the unpremeditated result of the efforts of men to reach individual ends

(I, 255).[2] However, while for some idealists all phenomena, whether social or natural, rest upon the absolute will, Diehl considers that this dependence upon will is a peculiar characteristic of social phenomena and necessitates a clear separation of natural and social sciences. This rejection of natural law in economic science is another point in which Diehl's position is characteristically German.

Characteristically German, moreover, is Diehl's emphasis upon the state. We cannot, he declares, accept the concept of world economy and reject the idea of a world state (I, 123). His emphasis upon the state and law seems even greater than that of most German economists. The legal order is decisive for the foundation of economic life in any conceivable economic organization (I, 48). All economic phenomena are also phenomena of a legal order (I, 40); all economic concepts are intelligible only on the assumption of a definite legal order (I, 41); and no distinction can be made between economic and juristic concepts (I, 42). Even Professor Diehl, however, feels that Stammler has overemphasized law. He declares that the law cannot be made responsible for all economic phenomena; the actual organization of economic life depends essentially (*wesentlich*) upon the conduct of the individuals themselves (I, 49). Later, he adds that the changes in economic life have played a decisive rôle in the development of the law of property (I, 65). Professor Diehl thus makes greater concessions to individualism than the juristic philosopher to whom he dedicates his first volume. Nevertheless, the characteristics of individuals are of less importance than the conditions established by the general will. These conditions, such as private property, the institutions of exchange and

2. Professor Diehl also holds another view of the foundation of social institutions, which he might have some difficulty in reconciling with his insistence upon the conscious social will. There appears to be more mechanism than teleology in his assertion that the law is the resultant (*Niederschlag*, precipitation) of certain conditions of power among the legislative factors (I, 388). He also speaks both of the economic organism (I, 108) and of the mechanism of exchange (I, 430), and declares that economics is concerned with the search for causal explanations (I, 19). Nevertheless, I am sure that he would reject any naturalistic interpretation of such passages.

markets, and money, are established by acts of organization, of law-giving (I, 278). Professor Diehl's greater emphasis upon the state, as a matter of his social-legal philosophy, does not, however, commit him to the neo-mercantilistic policy of far-reaching state interference. He criticizes the younger historical school for the absolutism of their policy as he criticizes the classical economists for the absolutism of *laissez-faire* (I, 228). He also insists that the social-legal philosophy in no wise commits its adherents to the advocacy of socialism (I, 5). Nor does his great emphasis upon the state imply an assertion that the state is an absolute value, an end in itself. The emphasis is derived from his insistence on the fundamental significance of the legal order, for which the state is a prerequisite.

Still another point in which Professor Diehl follows German traditions is his insistence upon an historical-realistic theory. Economic phenomena are intelligible only on the assumption of a definite legal order. There are no general economic laws; the most that we can know are the regularities and the causal relations between them that appear in definite historical epochs (I, 83). The abstract method can be applied only to obtain results within the realistic-empirical inquiry (I, 255). It may be used to explain the essence of certain economic phenomena, and to show the significance of natural phenomena for their development. Thus Ricardo and Thünen developed the laws of rent by the abstract method, because they did not neglect anything of importance for their problem (I, 268).

Despite the points in which Professor Diehl thus appears to follow the German tradition, he is nevertheless far from assenting to Schmoller's assumptions or contented with the results of his work. Schmoller's assertion that there are fundamental ethical norms which are common to all religions and all moral systems and which have the fixedness of objective scientific truths, is rejected in favor of ethical subjectivism (I, 385). Professor Diehl denies "scientific" character to the economic policies urged by Schmoller and his followers. But he rejects also the psychological premises of the younger historical school. The attempt to explain economic phenomena on certain general psychological characteristics of men leads

to the false ideas that certain economic institutions are eternal and "natural," and that economic life is governed by laws (I, 244). Psychological events occur only within a legal order and are determined by it in large measure (I, 230). Professor Diehl further rejects as vague the notion that individuals are bound together by certain psychological, ethical, and legal ties; legal bonds alone make an economy. Thus he concludes that realistic economics is justified in limiting its attention to those phenomena which are at once both economic and legal.

He was, perhaps, led to his dissent from the younger historical school by his dissatisfaction with the results of its work. A "dubious multiplicity" has resulted from the broad scope of inquiry to which its realistic historical economics has led; its presentation of economics often reads like a general history of civilization. This is particularly true of Schmoller (I, 224). Moreover, altho that school gave some place to deductive thinking in its discussions of methodology, in practice it has neglected deduction. It has collected a mass of materials, but has lost its grasp of the fundamentals. The leaders have neglected to educate their students in theoretical thought (I, 222, 223). Professor Diehl would concentrate his efforts upon the present historical epoch, capitalism; and, instead of ranging through technology, psychology, and ethics, would confine his attention to economic-legal phenomena.

Professor Diehl also differs from the school which has so long dominated German economics in his attitude toward the classical school. New ways toward the understanding of economic phenomena are not necessary. The old method of classical economics, with careful use and the necessary qualifications, can be retained in grappling with the most complicated occurrences of modern economic life (I, 485). The errors of the classical school came, Professor Diehl considers, from its assumptions of the economic individual and of the natural character of private property, free competition, and other legal institutions. These assumptions led the classical economists to treat the subject as a natural science and to seek for natural laws and natural policies (I, 192–209).

Professor Diehl is, I take it, closer to the classical economists than to the Austrians. The Austrians, in their search for pure economics, have avoided many of the problems with which the economist must deal. This school, which terms itself psychological, has no psychology founded on science; it has only an artificial construction, not based on experience (I, 285–286). It has reached over into the field of another science and must make the economist a dilettante in psychology (I, 297). Professor Diehl gives no extended discussion of the marginal analysis of the Austrians which, in the reviewer's judgment, is more important than their peculiar psychology. One application of the marginal analysis, the imputation theory, he rejects unqualifiedly. Unfortunately this important issue in the logic of economics is treated only incidentally in his comments upon Professor Leifmann. There he declares that most of the criticism of the imputation theory is correct, and brands as clearly erroneous the common analysis in which the product is attributed to the separate factors of production (I, 326). Can it be that no one in Germany now ventures to defend the imputation theory, as Professor Liefmann has claimed in the pages of this journal? [3]

This summary of Professor Diehl's principal contentions in developing the social-legal view of the scope, method, and logic of economics will perhaps serve to indicate the complexity of the problems his book presents. It will also show that his first volume will tax the interest and the thought of most foreign economists. It requires, moreover, an ability to think in the German language and in the spirit of the classical German philosophy. Many would be inclined to turn it over to students of philosophy, psychology, and scientific method. Not without hesitation, I will endeavor to indicate some of the more general problems where criticism may be made. Any extended criticism is obviously impossible in the narrow limits of a review.

In the first place, the doctrine of free will seems to have led Professor Diehl into undue skepticism, perhaps error. How can we speak of laws of value and price, he asks, which are

3. Quarterly Journal of Economics, vol. 36 (1922), p. 335.

matters in which the freedom of will decides (I, 270)? If freedom of will is to mean that the only thing we can regularly expect of human beings is capricious conduct, any one who believes in the doctrine would have to follow Professor Diehl into skepticism. As a matter of realistic-empiricism, however, we can observe more regularity than caprice in human behavior. I take it that Professor Diehl would agree that the motivation of such behavior and its ultimate explanation in terms of either freedom or determinism are matters for the psychologist and philosopher rather than the economist.

In the second place, Professor Diehl seems to have committed himself unnecessarily to a theory of knowledge which is at least questionable. He denies the possibility of political science, not because the mass of complications makes it impossible to survey the material, but because we can never know what should happen as we know what does happen or has happened. The difficulties are not practical, but epistemological (I, 19). He thus is led to a despairing acceptance of confusion as ultimate. Since economic phenomena are also legal and thus political, economics cannot have laws, because it rests upon the free and ignorant social will. Now, no one will deny that we are as yet unable to reduce all the apparent variations of economic-legal phenomena to regularity. Few economists would fail to condemn the rash presumption of some writers who claim that their programs of tariffs, taxes, or socialism are "scientific." But is there not a world of difference between confidence that we now know everything and confidence that we can know something?

Professor Diehl's sharp division between natural and social sciences appears to result, not only from his studies in epistemology, metaphysics, and ethics, but also from his discontent with the abuse to which such terms as "the natural laws of economics" have been subjected. This abuse will make any economist cautious, and some so timorous that they would avoid philosophy as much as possible All would admit that there now appears to be much more variability and much less regularity in the phenomena they study than in the field of "the natural sciences." They do not need to decide whether

this variability is ultimate. All they need is the confidence, which any scientists must have, that there are further regularities which can be discovered. Professor Diehl's philosophy may not logically lead to hopeless skepticism, but it certainly introduces so many confusing philosophical problems that the economist who follows his lead in is danger of losing his intellectual courage, and is distracted from his own work. In his reaction from the overconfidence of some economists, Professor Diehl has gone to the other extreme. By rejecting parts of Stammler's philosophy for ethical subjectivism and epistemological skepticism, he has left teleological economics resting upon shifting sands. His results may have the unfortunate effect of deterring some economists from pursuing the study of the scope, method, and logic of their own subject.

Professor Diehl, after all his philosophizing is over, comes to the starting-point of all economics: there are regularities. He prefers the terms tendencies or regularities to the term laws (I, 414–415). Despite his denial, the reviewer sees here nothing more than a quarrel about words. He says that a law must be unconditional, eternal, and universal. But how can the law of diminishing returns from land, which he calls a natural law (I, 23), be a law at all, as it is conditioned, as he himself says, upon a given technical stage (II, 60)? Because private property in land was not found among certain peoples, is it necessarily less subject to law than electric generators? Professor Diehl's philosophical studies would seem to have made him too cautious, too fearful of misunderstanding.

In his second volume, on production, Professor Diehl is forced to drop some of the subjectivism, skepticism, and caution which so impress the reader of his introduction. He ends the first volume with the remark that the social-legal school is to be known by its fruits. When he starts to collect the fruit, he casts aside much of his philosophical burden. Altho in his introduction (I, 22) he rejects Stumpf's declaration that economics is a mixture of natural and cultural science, over one third of the second volume is devoted to the natural and technical conditions of production. Altho he concludes (II, 363) that his discussion of five problems of the "capital-

istic method of production" is subjective, subjectivism is not the key-note. In the introduction, it is laid down that the economist can give only his subjective judgment of private property (I, 304); nothing in human nature compels us to consider private property as a foundation of economic life (I, 234). In volume two, however, he declares that the thought of collective ownership of natural resources is to be rejected. Private property is justified because it is the best means of stimulating men to intensive work and utilization of all economic advantages (II, 249). In volume one, he declares that such motives as the desire for gain are resultants of specific forms of social organization (I, 244). In volume two, in answer to Sombart, he declares that men in their economic relations have always been moved by the search for gain whenever the legal institutions made gain possible (II, 281). This condition does not appear to be a greater qualification of our theory of human nature than the statement that men have fished only where there was water. Altho he has insisted in the first volume that economic and legal concepts must be identical, he defines capital in the second volume as movable property used for gain (II, 269). May it not be doubted whether this is a legal definition?

Professor Diehl's discussion of production is very largely concerned with those problems of production now prominent in public discussion, such as labor, socialism, crises, and concentration of management and production. Many of his points would be worth detailed comment. For example, an economist familiar with the doctrine of comparative advantage might question his assertion that every country must endeavor to produce within its borders goods which it can produce as well as other countries, or even better (II, 186).

It is on the subject of diminishing returns and proportionality that Professor Diehl makes the greatest use of contemporary American discussions. He remains convinced that diminishing returns are phenomena peculiar to natural resources (II, 59–120). In rejecting the universality of the law, he has, in the reviewer's judgment, misunderstood the contentions of Professor Clark, which he selected as the state-

ment of the universalist position. He interprets Clark to mean by returns, not the gross return in physical product, but the net return to the business man (II, 112). Doubtless Professor Clark and many other American economists would endeavor to state the law in terms that would reduce bushels of corn, quarts of milk, and pairs of shoes to some common economic quantity. But they would reject a statement in physical units for agriculture and in profits units for manufacturing. The universalists might illustrate their contention by pairs of shoes, whether received by the employer or the workmen. They would say that additional land and capital applied to a fixed quantity of labor would result in an eventual decrease of the number of pairs per unit of the material factors. They would, of course, make the usual qualifications; and some would not separate land from capital. In any case, they would reject Professor Diehl's interpretation. Professor Diehl, in the reviewer's judgment, has not kept distinct the problem of the increased production where one or two factors are kept constant and the problem where all factors are increased in their economical proportions ("increasing costs in agriculture *versus* decreasing costs in manufacture").

There are other points where Professor Diehl's treatment of production might be criticized, if space permitted. But on the whole the first fruits of the social-legal school are not unpromising. The reader will look forward with interest to his discussions of value and distribution, where the realistic method should provide a salutary corrective for the dialectic of utility calculation and factoral distribution. It will do good to sundry economists to be reminded that a market is not a machine for the calculation of utilities, and that the ownership of the factors is not explained by the law of diminishing returns. The emphasis which the social-legal school would put upon the study of property and legislation is perhaps a necessary reminder to some economists that their field was once called political economy, and consisted of problems of national welfare and strength. Perhaps among those who feel that the field of "pure theory" has been cultivated up to, or even beyond, the margin of reasonable returns, there are some who

will be stirred by the thought that the law has a large amount of sorted data, which have been scrutinized in numerous discussions of legal principles, and have in turn been reëxamined in juristic philosophy. The fertility of the legal field may induce some to avoid the rush to the field of psychology, which appears at present to yield highly diversified products of uncertain quality and to have many of the dangerous attractions of a lottery.

If Professor Diehl can lead German theorists to concentrate upon economic-legal phenomena, foreigners may look forward to significant additions to our body of doctrine. They will not revolutionize economic science, for Professor Diehl is conservative as well as scholarly. Foreigners who do not think in terms of the classical German philosophy, and some who do, will dissent from much of Professor Diehl's own philosophy. Many Americans will prefer on some points the views of the English and American economists with whom they are more familiar. All should recognize, however, that Professor Diehl has diagnosed the weaknesses of other schools in a masterly fashion and explained his diagnosis with a skilful hand. Altho fundamentally conservative, he does not follow blindly along well-worn paths. Many of the fruits he has gathered are not new discoveries, but they are at least separated from the weeds which have elsewhere shadowed and dwarfed them. The foreigner may expect from his later volumes a careful, conservative, and skilful presentation of economic doctrines, based on wide scholarship and well-informed judgment.

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THE CHENILLE AXMINSTER CARPET MANUFACTURE

One of the chief characteristics of the textile industries as they exist today is, generally speaking, their automatism, the extent to which automatic operations have superseded the older hand processes. As Professor Marshall says, these industries may be carried on "by standardized machinery, which can be driven by the blind force of nature, being dependent on the guidance of intelligent fingers only in its minor details." [1] One is a bit surprised, accordingly, when he runs upon a branch of a textile trade, which is domesticated in occidental countries, but in which hand operations still play an important part. Such is the manufacture of chenille Axminster carpeting. This branch of the carpet industry is also of interest because, by reason of its relatively recent adoption in this country, the American production exhibits so fully the features of an "infant industry." I know of no case in the textile manufactures, nor indeed in other lines, where the indications are so clear-cut. The other types of carpet manufacture in the United States, with which one would most naturally bring the chenille Axminster production into contrast, are noteworthy both in the degree to which machine operation has replaced the older hand processes and to which the usual indices of maturity, such as the invention and adaptation of labor-saving machinery or dominance of the home market, are manifested — comparing well in these regards, I believe, with any of the textile industries.

The chenille Axminster carpet manufacture dates from 1839, when the method of production was developed by James Templeton, of Glasgow, Scotland. This method was devised to yield by more expeditious, semi-mechanical operations a

1. Marshall, Industry and Trade, p. 57.

carpeting similar in appearance to the hand-made Axminister rug, at that time still produced wholly by the hand-tufting process. In its present status, the manufacture consists essentially of two stages, weft-weaving and setting. In the former, of which the ultimate product is the "fur," "chenille" or tufted yarn (to be used in making the pile surface of the finished carpeting), a cloth of cotton warp and woolen weft threads is first woven.[2] The cotton warp threads are not placed evenly in the harness of the loom but in groupings of four or five together, and these groupings are an inch to an inch and a half apart.[3] The completed "weft-cloth" is taken to a machine equipped with knives by which it is cut at the several points midway between groupings of warp threads. As the tufted yarn thus produced comes from the knives it is drawn, under tension, over a steam-heated drum indented with V-shaped flutings. The cotton warp threads in each strand of tufted yarn are drawn into the base of a fluting, and the ends of woolen thread still projecting on either side of the strand are pressed upward by the sides of the fluting, and, in consequence of the heat and dampness, fixed in that position. Then the second and more important portion of the manufacture, the setting, consists of a sort of weaving by which this V-shaped "fur" is fastened or "set" into a heavy backing of jute or woolen, linen, and cotton threads. Subsequently, the pile is cut to a uniform height in a shearing machine, the edges of the goods are bound, and the carpeting is complete.

The carpeting may be and often is of a single color — dull brown, slate gray, pale blue, and the like — or it may have an elaborate design. In the latter case, each transverse row of tufts in the design must be produced separately in the weft-weaving operation, and then inserted at the proper point in the setting. Again, the carpeting may be of a distinctly low quality, with a short pile of poor woolen yarns, a backing

2. The appearance of the tufted yarn is, of course, the source of the name chenille or caterpillar.

3. The distance between groups determines the height of pile in the finished carpet.

of jute yarns, and a loose texture; or it may attain the highest quality among machine-made or semi-machine-made floor coverings, with a high, upstanding pile and heavy woolen yarn backing. Stock-color rugs of the latter type sell retail in the American market at the present time for the extraordinary prices of from $18 to $24 per square yard.[4]

As the processes through the cutting and pressing of the "chenille" now stand, they are ruled by the machine as much as in other textile trades, except that in the manufacture of chenille for figured goods, the shuttle of the weft-weaving loom must be frequently changed and this requires close attention by the weaver and frequent stoppage of the loom. The operation of greatest difficulty in the manufacture, however, and the one which as yet has not been adapted to a purely mechanical procedure, is that of setting. Special care must be taken in this operation, not only to fasten the chenille firmly into the web of backing threads, but to place this large yarn evenly in each transverse or weft row, and to be assured that the point of the V-shaped fur is directed downward, thrusting the fringes of the yarn upwards to form the pile of the finished fabric. To accomplish these results, hand methods are still used to a considerable extent. For the deposit of the fur in the "shed" of the warp threads, the earliest and for a long time the only method was to wrap the fur upon a stick a yard or so in length, which could be passed from side to side of the loom between the layers of warp. Later the fur was wound into cops which could be utilized in large shuttles in much the same manner as weft yarn in the ordinary weaving; but this method was not satisfactory in many respects, particularly because the pile yarns were often crushed or bent. The most recent improvement is a so-called weft-carrier, a

4. By virtue of the particular method of manufacture, a chenille Axminster rug may be produced in any shape desired, — some form of oblong, as is most usual, but also circular or elliptical. The enhancement of cost is in most of such cases not greatly over that for production of stock sizes. Partly for this reason (which permits the fitting of a rug to the shape of a particular room), tho more by reason of the luxurious character of the finished product, a much greater proportion of the domestic production is upon special order than in other types of carpet manufacture.

device holding a considerable quantity of yarn, which moves mechanically upon a bar placed behind the loom and parallel to the loom beam, and which in a transverse motion deposits the fur upon the layer of warp threads. This latest method, however, eliminates only the manual labor of passing the stick or pushing the shuttle back and forth. As before, the loom must be stopped, after each cross-row of chenille is deposited on the warp threads, the fur straightened, and then combed into place by means of hand-combs. Since even in the best carpeting of this type only four shots of backing weft threads intervene between two rows of fur, the production goes on in a most intermittent fashion. Only by reason of the coarseness (in size) of the constituent yarns and fur is the hourly output of the loom kept as high as it is.

The looms in this manufacture, because of the peculiar methods involved, are of surprising width, the majority of them running to nine feet or more, and the largest reaching thirty feet. For the operation of the narrower setting machines and the combing of the fur, two weavers are required, while for the thirty-foot loom it is usual to employ four. Moreover, in consequence of the skill demanded and the strenuous exertion, the use of adult male weavers is almost universal.

The evidences of immaturity in the American industry are to be found in the state of the technical equipment, the conditions of labor, and the relation of this carpet production to the total output of the American carpet manufacture. The type of loom employed in both weft-weaving and setting is essentially the same as that used in the foreign industries, especially the British. Originally, the setting loom was borrowed and imported from England. It is a mark of progress for the industry, however, that now looms for this purpose are being constructed in the United States. Likewise, it is a hopeful sign that the adoption of the weft-carrier attachment on the setting loom has been somewhat more rapid in this country than abroad, altho the device is apparently of English origin. The more alert British firms have added this labor-saving mechanism to their machines, but apparently

the proportion of looms so equipped to the total number of the industry is substantially greater in the United States.

In addition to adopting foreign machinery at the outset, the manufacture also was at first considerably dependent upon foreign labor. Foremen and workers, especially weavers, were encouraged to immigrate, and even today a substantial proportion of foremen and weavers are of foreign birth and industrial training.[5] Another factor on the labor side is the restriction or limitation in the supply of workers, particularly setters. By reason of the character of the work and of the long apprenticeship necessary for the development of skilled operatives,[6] together with the relatively short time that these fabrics have been produced in this country, the number of qualified workers is seriously restricted, with the natural result that wages are disproportionately high in these sections of the manufacture.[7]

Finally, the chenille Axminster manufacture is still an inconsiderable factor in the domestic carpet industry as a whole, its output being returned on a quantity basis for 1919 as less than 1 per cent of the total. No mention is made of the manufacture in the Census of 1910, but by 1914 its output had reached 178,000 square yards, and in 1919, 310,000 square yards. That the growth has not been even more rapid is in large part, I believe, to be ascribed to the fact that our industry has too greatly aimed at the production of the finest qualities of goods. To a larger extent than in other portions of the carpet manufacture, the chenille Axminster

5. The English affiliations of one of the concerns engaged in the manufacture would in part account for this condition.

6. One manufacturer writes: "It takes on the average pretty nearly two years to develop a really competent operator (setter)."

7. Typical wage scales collected by the United States Tariff Commission show that whereas weaving rates per linear yard run from 4.60 cents to 13.25 cents for other types of seamless rugs nine feet wide, for chenille Axminsters (with two weavers to a rug, presumably) such rates are from $1.68 to $3.19. Another indication of the importance of labor in the chenille Axminster manufacture is the proportion of labor cost to total cost as also ascertained by the Tariff Commission. For no type or form of carpeting is the proportion greater than 28 per cent, except for the chenille Axminster, where the percentage for seamless rugs reached 38 per cent. Tariff Information Survey on Carpets and Rugs of Wool, pp. 67, 100.

industry, as above noted, is the recipient of special orders, orders for fabrics of special size, special quality, or special color or design. An appreciable amount of this trade is connected with the business of interior decorators in the large urban centers. Figures of values as found by the Census of 1919, suggest the luxurious character of the chenille Axminster production. The value per square yard of the tapestry velvet production was $2.09, for Axminster proper $2.41, for Wilton $4.72, but for chenille Axminster $8.01.[8] On the other hand, the chenille Axminster production in foreign countries such as the United Kingdom is a much more important part of the total carpet industry, and the average quality of production is undoubtedly much lower. Nearly a fourth part of the British carpet production is said to be chenille Axminster; and far from confining the output predominantly to goods with woolen backing and superior pile, the British manufacturer turns out a considerable proportion of his product in fabrics of jute backing and a medium or low pile. Moreover, the larger scale of his operations permits the British manufacturer to standardize, at least in a measure. Particularly striking is the case of James Templeton and Company, the Scotch manufacturers, who prepare and keep on hand substantial quantities of "fur" of types and qualities suitable for the production of carpeting of given grades and designs. These varieties can then be sold by description or otherwise, and all that remains to be done at the factory is the setting and finishing.[9] Finally, it may be noted that the American production is confined to four establishments. In none of

8. A domestic manufacturer has stated that the American production supplies the domestic demand (Mr. George McNeir of the Mohawk Mills, before the Ways and Means Committee, Tariff Hearings, 1921, p. 2673). This statement, however, is of doubtful accuracy. Importations have been fairly constant over a number of years. Sales of carpetings, especially of this type, by James Templeton and Sons, leading British manufacturers, have been so great that they find it advantageous to maintain an office and special agent in New York City.

9. In addition to the three indices of immaturity above mentioned, there is the further one that to a considerable degree the types of chenille Axminster carpeting produced by American mills are copies of British types, particularly of Templeton's qualities, since James Templeton and Sons are the largest importers of these goods. (No statistics of importations are available.)

these has it been carried on more than fifteen years and the substantial growth has been since 1914. The character of the production in one of these mills is indicated by the fact that the chenille Axminster manufacture was taken up after non-success in the production of Oriental rugs by hand in that establishment.[1]

Taken all in all, the chenille Axminster manufacture presents the problem of "infant industry" in a pretty striking manner. Here is a manufacture borrowed from a country where it has had a prolonged career and where it forms a considerable part of the total carpet production. While it has undoubtedly made some advance in competitive strength since its introduction, it is still carried on under clearly disadvantageous conditions. It enjoys no superiority in technical equipment above the better organized foreign mills, and it is still dependent to a substantial degree upon imported labor for the portions of its production requiring the greatest skill. It produces only the finer qualities of fabrics, tho these types demand peculiarly greater care in manufacture and cannot be turned out in bulk; and it must pay substantially higher wages than the foreign industries.[2] Moreover, beyond these factors, some of which are either susceptible to change in ordinary development or are similar to the difficulties under which other branches of the textile industries operate, there is the further unfavorable circumstance that the most important process in the chenille manufacture does not seem to lend itself to automatic machine control.[3]

Granted that this is an "infant industry," is it one in which — to quote Mill's famous exception to free-trade doc-

1. Despite the inconsiderable size of the domestic industry, the men connected with it have been among carpet manufacturers the most active in the endeavor to secure assistance through protective duties. See testimony before Ways and Means Committee in hearings of 1913 and 1921.

2. No satisfactory statistics on comparative wages here and abroad are available in the report of the Tariff Commission above mentioned. Mr. McNeir of the Mohawk Mills, however, gives certain figures, tho the source of his foreign data does not appear. The labor cost of manufacturing a particular chenille rug as of 1920 in America was $100, and in Great Britain, $36.25. Tariff Hearings, 1921, p. 2673.

3. A circumstance which possibly might be quoted as arguing for the successful adjustment of the chenille manufacture to the economic con-

trine — "there is good ground of assurance" that it "will after a time be able to dispense" with protection? Is it an infant that is worth coddling and rearing? Or — to put the matter in terms yet more favorable to the protectionist case — should the protection already extended to the other types of carpetings be expanded to include this relatively new-blown branch? If the chenille manufacture should display the power of adaptation and the degree of inventiveness which has marked the manufacture of these other types of carpeting, as, for example, plain Axminster or Wilton, one might well hesitate to deny temporary support through protective tariff duties to this youngest member of the family, when the popularity of the chenille carpeting abroad indicates or suggests good inherent qualities in this fabric.[4] On the other hand, may one not look upon the chenille carpeting as some observers are inclined to regard the production of tussah silk goods, cotton fabrics of highest qualities, or gunny sacks — industries which because of peculiar natural or economic situations in foreign countries seem unlikely to attain full acclimatization or adaptation to American conditions within any reasonable time? Inasmuch as such industries, with the possible exception of the gunny-sack production, cannot be considered as in any way essential industries, should we not rely upon importations to supply the insistent demands?[5]

ditions of this country is that a manufacture of somewhat similar type was successfully carried on in this country for several recent decades — that of Smyrna rugs. The chief difference, however, was at the point just dwelt upon above — that of setting. After the weft cloth had been cut, the fur was twisted, wound upon a cop and inserted into an ordinary shuttle for the rug-weaving. Less care was taken of the tufted yarn, hand-labor for straightening and combing-in the fur was unnecessary, and the product was of an inferior quality.

4. It is possible, perhaps probable, that inadequate protection might check the importation of foreign chenille Axminsters while at the same time preventing the establishment of a domestic production.

5. There is in addition, of course, the question of the claim which manufacturers already launched in this industry have to protection of "vested interests." In so far, however, as the growth of the industry has come during the war period — under the Underwood Tariff — the case for really adequate protection is not particularly strong from this point of view.

The above analysis of the situation in the chenille manufacture, however, should acquaint the economic student in a concrete way with the type of case which presents itself frequently to the congressional maker of tariffs, and give him some appreciation of the difficulties confronting the tariff legislator.

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MARSHALL ON CONSUMERS' SURPLUS IN INTERNATIONAL TRADE

IN his last book, *Money, Credit, and Commerce*,[1] Alfred Marshall gave a "numerical illustration of the demands of each of two countries which trade together, for the goods of the other." In analyzing his figures so as to appraise the net benefit one country and the other get from the interchange of their goods, the great economist appears to have made a perplexing slip. The purpose of the present note is to warn other students of this erratum, and to consider some of the more general aspects of the problem.

Marshall's tabular arrangement of his figures is reproduced here. There are, it will be seen, two demand schedules, of the type which Marshall's *Principles* has made familiar. Prices are not expressed in money, but in the number of bales of domestic products per hundred bales of imported products at which each country would be willing to take larger or smaller quantities of the other country's goods. A bale is merely a "representative unit," a "unit product of labor and capital."

"Adding up," Marshall says, "we find that G gets for 70,200 of her bales a number of E bales for which it would be worth her while to pay 125,300 of her bales rather than forego them. The net benefit of the trade to her therefore is 55,100 unit products of her labor and capital."

1. Pages 161–163.

(1)	*Schedule of terms on which* E *is willing to trade* (2)	(3)	*Schedule of terms on which* G *is willing to trade* (4)	(5)
Number of *E* bales	Number of *G* bales per hundred *E* bales at which *E* will part with those in (1)	Total number of *G* bales for which *E* is willing to part with those in (1)	Number of *G* bales per hundred *E* bales at which *G* will buy those in (1)	Total number of *G* bales which *G* is willing to give for those in (1)
10,000	10	1,000	230	23,000
20,000	20	4,000	175	35,000
30,000	30	9,000	143	42,900
40,000	35	14,000	122	48,800
50,000	40	20,000	108	54,000
60,000	46	27,600	95	57,000
70,000	55	38,500	86	60,200
80,000	68	54,400	82½	66,000
90,000	78	70,200	78	70,200
100,000	83	83,000	76	76,000
110,000	86	94,600	74½	81,950
120,000	88½	106,200	73½	88,500

Now the advantages in question are not assumed to rest on differences of absolute or comparative costs, or upon the effects which the presence of increasing or diminishing return might have. Such variables do not enter into the hypothetical data which condition the problem, and therefore do not affect its solution. In short, the problem as given is merely the straightforward one of measuring consumers' surplus.

Following the procedure, Marshall has precisely indicated elsewhere,[2] the steps are as follows. To *G*, 10,000 *E* bales are worth 230 *G* bales per hundred, or 23,000 *G* bales altogether. Ten thousand *more* of *E* bales are worth to *G*, 175 of her own bales per hundred, or 17,500 in all. Taking seven more steps of the same kind, we find that 90,000 of *E* bales are worth as much to *G* as are 111,950 (not 125,300) of her own bales. But the equilibrium price is 78 *G* bales per 100 *E* bales, so *G* gets the 90,000 *E* bales for 70,200 of her own bales. The net benefit or consumers' surplus accruing to *G* is expressed, therefore, as 41,750 (not 55,100) *G* bales.

"The arrangement of the figures," Marshall observes, "is rather less convenient for a similar calculation of the gain

2. Principles, Bk. III, chap. 6 (6th ed. p. 125).

which *E* derives from the trade. But they indicate that it would be worth *E*'s while to give 170,000 of her bales for the 70,200 *G* bales for which she actually gives 90,000; so that her total net benefit by the trade is 80,000 unit products of her labor and capital."

Proceeding as before, we note that the first 1,000 *G* bales have as much value to *E* as 10,000 of her own bales. A second increment of 3,000 *G* bales is deemed to be worth 15,000 *E* bales, for *E* is willing to give 20,000 *E* bales for 4,000 *G* bales, which makes the price 500 *E* bales per hundred *G* bales. A third increment, 5,000 *G* bales, *E* appraises as highly as 16,667 of her own bales. Continuing in this manner until the equilibrium point is reached, we find that the 70,200 *G* bales which are had in exchange for 90,000 *E* bales are really worth to *E* 150,931 (not 170,000) of her own bales. The net benefit of the exchange to *E* is, in round numbers, 61,000 (not 80,000) *E* bales.

There seems to be no escape from the conclusion that Marshall, ordinarily meticulously careful with the details of his exposition, fell into arithmetical slips at this point. It is true that results much closer to his could be got by fitting smooth curves, made arbitrarily (and reasonably) high for small amounts of trade, to the figures in column (4) of the table and to the reciprocals of the figures in column (2). But Marshall describes his procedure as "adding up," not as integration. Furthermore, the figures in columns (2) and (4) do not accord with any simple algebraic function of the volume of trade, as very likely would have been the case if the smooth curve had been constructed first and the figures taken off subsequently. A more plausible guess [3] is that Marshall, revising his manuscript again and again, altered his tables without changing his text.

Matters of detail aside, what of the general validity and significance of the reasoning upon which Marshall's conclusions rest? In my opinion, here, as at a number of other points, Marshall lost sight of some of the limitations of the

3. Suggested by Professor F. W. Taussig, who first called my attention to the discrepancy in Marshall's figures.

method he used in analyzing the equilibrium of supply and demand, even tho they were self-imposed limitations, and tho at other points Marshall showed himself thoroly aware of them.

Marshall's was a one-thing-at-a-time method. In analyzing a given situation the variables brought under survey were made as few as possible. Others were relegated to the background. It is important to note, however, that Marshall generally took pains to ensure that the reader should keep this background in mind. Few economists, in fact, have so completely laid bare the limitations that attend their assumptions. Very likely it is because of the careful way in which different parts of the analysis are developed, coupled with this emphasis on the limitations of these separate parts taken each by itself, that Marshall's work, seen in some aspects, gives an impression of structural weakness. He never glossed over difficulties. He points the way for his critics. But, as I have said, there were times when he overlooked the full significance of the limitations he had put on himself.

This is the more remarkable in view of his own appreciation of just what the mathematical method could accomplish and what it could not. In the preface to the first edition of the *Principles* he wrote: "The chief use of pure mathematics in economic questions seems to be in helping a person to write down quickly, shortly and exactly, some of his own thoughts for his own use: and to make sure that he has enough, and only enough, premises for his conclusions." So he put into the mathematical appendix to the *Principles* only "a few specimens" of those applications of mathematical language which had proved most useful for his own purposes. But those few specimens show unmistakable power and facility.

It is in this mathematical appendix, moreover, that Marshall appears most keenly aware of the limitations of the one-thing-at-a-time method. Thus, Professor Edgeworth's method of representing utility as a general function of varying combinations of commodities "has great attractions to the mathematician; but it seems less adapted to express the everyday facts of economic life than that of regarding, as

Jevons did, the marginal utilities applied as functions of x simply." [4] Or consider the reference to attempts like those of Walras and Pareto to define the general conditions of economic equilibrium by sets of simultaneous equations.

> But while a mathematical illustration of the mode of action of a definite set of causes may be complete in itself, and strictly accurate within its clearly defined limits, it is otherwise with any attempt to grasp the whole of a complex problem of real life, or even any considerable part of it, in a series of equations. . . . And hence arises a tendency towards assigning wrong proportions to economic forces; those elements being most emphasized which lend themselves most easily to analytical methods. . . . It is a danger which more than any other the economist must have in mind at every turn. But . . . in discussions written specially for mathematical readers it is no doubt right to be very bold in the search for wide generalizations. . . . Such discussions have their place: but it is not in a treatise such as the present, in which mathematics are used only to express in terse and most precise language those methods of analysis and reasoning which ordinary people adopt, more or less consciously, in the affairs of everyday life. It may indeed be admitted that such discussions have some points of resemblance to the method of analysis applied in Book III to the total utility of particular commodities. . . . (But) we take each commodity by itself and with reference to a particular market; and we take careful account of the circumstances of the consumers at the time and place under consideration. . . . Each particular difficulty, each source of possible error, is pushed into prominence by the definiteness of our phrases: we introduce no assumptions that are not latent in the practice of ordinary life; while we attempt no task that is not grappled with in a rougher fashion, but yet to good purpose, in the practice of ordinary life: we introduce no new assumptions, and we bring into clear light those which cannot be avoided.[5]

The practical problems of life meet us one at a time. Economic analysis may easily yield results that are too abstract and general to be useful. Marshall tried to guide his own inquiries into more profitable fields. But in so doing he encountered difficulties of another sort.

Consumers' surplus is a case in point. Even within the limits Marshall set for himself, his method of measuring consumers' surplus, as various critics have suggested, is question-

4. Note xii, *bis*.

5. Note xiv.

able. I might be willing to pay $30 a ton for enough coal to heat one room for the winter, and $20 a ton for enough coal to heat two rooms. It does not follow that I should be willing to buy enough coal at $30 to heat one room *and* enough at $20 to heat a second room.[6] Another major difficulty, however, is inherent in the one-thing-at-a-time method. In a measure Marshall was aware of it.

> In the discussion of consumers' surplus, we assume that the marginal utility of money to the individual purchaser is the same throughout. Strictly speaking, we ought to take account of the fact that if he spends less on tea, the marginal utility of money to him would be less than it is, and he would get an element of consumers' surplus from buying other things at prices which now yield him no such rent. But these changes of consumers' rent (being of the second order of smallness) may be neglected, on the assumption, which underlies our whole reasoning, that his expenditure on any one thing, as for instance, tea, is only a small part of his whole expenditure.[7]

With respect to this reasoning, it may be observed, first, that some commodities absorb a respectable proportion of a consumer's money income; and second, that by no stretch of the imagination can the importance of a dollar to a consumer be deemed constant over the whole field of his expenditures. The different surpluses attributed to the consumer in his purchases of different commodities blot out one another. Consumers' surplus, as Marshall measures it, is not additive. Its sum, for any one consumer, comes precisely to zero.[8]

Nevertheless, it would be absurd to deny that consumers

6. Marshall replied to this objection in later editions of his Principles (e. g., 6th ed., p. 126, note), but the reply does not meet the point. There are, of course, various minor difficulties, such as those connected with the effect market prices have on consumers' appraisals.

7. Mathematical Appendix, note vi.

8. Even in the inquiries of such writers as use systems of simultaneous equation, net consumers' benefit cannot be measured: it can only be inferred. So far as purely mathematical considerations go, the position of consumer's benefits is precisely like that of pure profits of entrepreneurs. In the general equilibrium of preferences and choices "utility," under whatever name, cancels out. To save it, extraneous considerations must be invoked. Such considerations rest on the common sense assumptions (1) that consumers arrange their budgets in accordance with their preferences, and (2) that more command over goods in general is better than less.

gain when commodities are to be had with less exertion or at a smaller sacrifice of other goods. But the nature and conditions of such gains must be sought in the analysis of costs, not in demand schedules. Even then the net benefits conferred by such economies cannot be measured, altho it is possible to compare them and to rank them as greater or less.

All of these considerations hold with particular force in the special case of the measurement of the net benefits of international trade. From the fact that *G* would give 23,000 *G* bales for 10,000 *E* bales, it cannot be inferred that 20,000 *E* bales are worth as much to *G* as 38,500 of her own bales. And it will hardly be maintained that the last *G* bale in a shipment of 70,000 bales is as important a deduction from the stock left for *G*'s own consumers as the last bale in a shipment of 112,000 would be. Here again the study of costs affords the only practicable road to conclusions respecting net gains or losses. Gains come from *economies*. The economies of international trade are by no means an exact measure of its net benefits. But that net benefits are more or less according as the economies secured are more or less, is a justifiable assumption.

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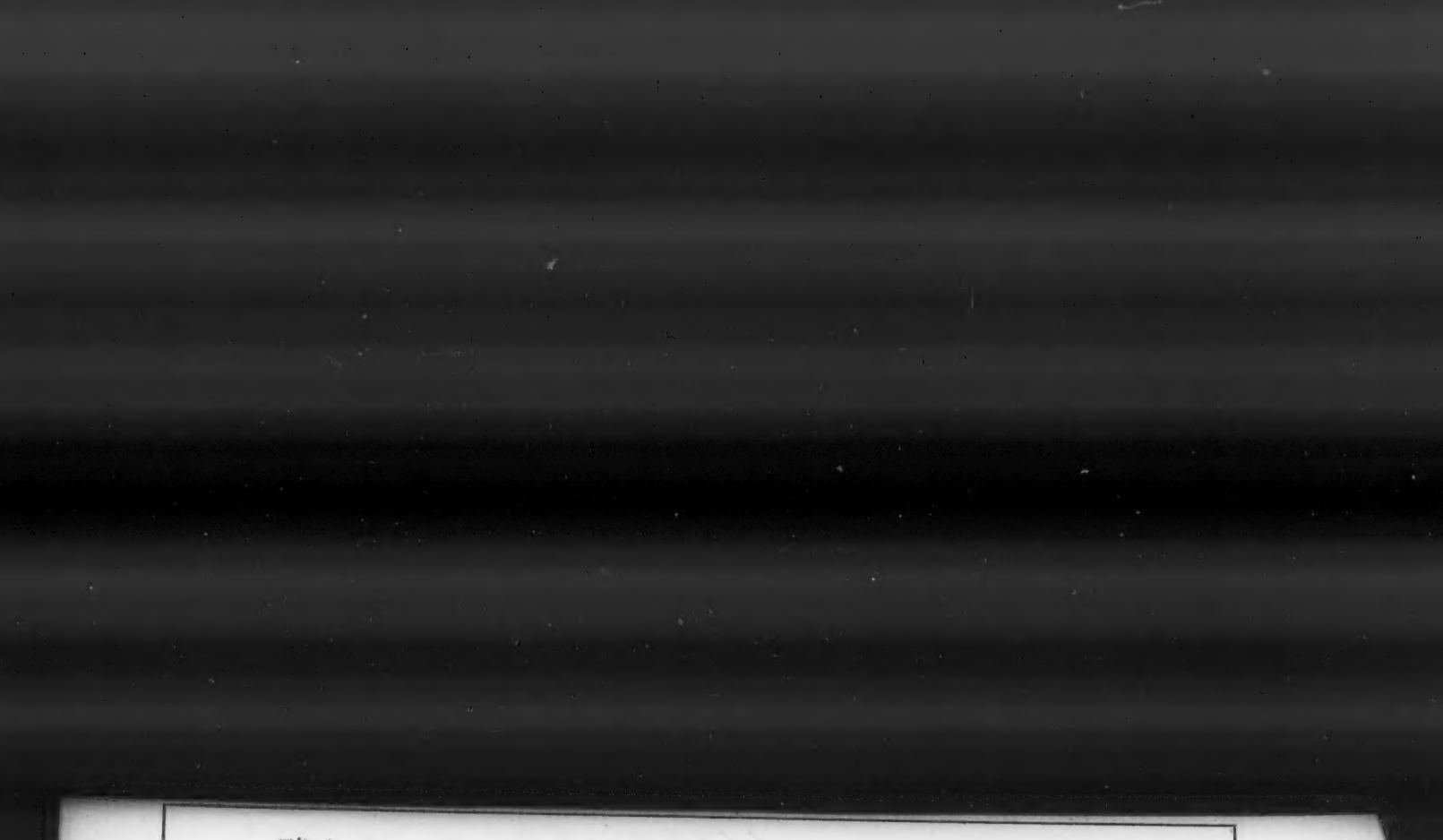
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